Volume 127, 1999

No. 1	January	3–144	No. 7	July	1385–1724
No. 2	February	145–264	No. 8	August	1725–1940
No. 3	March	265–432	No. 9	September	1941–2232
No. 4	April	433–580	No. 10	October	2233–2532
No. 5	May	581–944	No. 11	November	2533–2708
No. 6	June	945–1384	No. 12	December	2709–3056

Corrigenda: 575, 576, 940

Section A. Index to Contributions by Author

Notes and Correspondence are indicated by asterisks.

*Readers are encouraged to browse AMS journals online to search titles and abstracts of articles referred to in the index below by visiting the AMS Web site (**http://www.ametsoc.org/AMS**).*

ADAMS, JOHN C.; SWARZTRAUBER, PAUL N.; SPHEREPACK 3.0: A Model Development Facility, 1872–1878

ADCROFT, A. J.; HILL, C. N.; MARSHALL, J. C.; *A New Treatment of the Coriolis Terms in C-Grid Models at Both High and Low Resolutions, 1928–1936

ALBERS, FRANCK; see SAUVAGE, LAURENT; 486–503

ALEXANDER, G. DAVID; WEINMAN, JAMES A.; KARYAMPUDI, V. MOHAN; OLSON, WILLIAM S.; LEE, A. C. L.; The Effect of Assimilating Rain Rates Derived from Satellites and Lightning on Forecasts of the 1993 Superstorm, 1433–1457

ALPERS, WERNER; see MÜLLER, GERD; 363–380

ALTSHULER, ERIC; see ZHANG, DA-LIN; 3032–3038

ANCELLET, G.; see RAVETTA, F.; 2641–2653

ANDERSON, C.; see SEGAL, M.; 1687–1692

Anderson, Jeffrey L.; Anderson, Stephen L.; A Monte Carlo Implementation of the Nonlinear Filtering Problem to Produce Ensemble Assimilations and Forecasts, 2741–2758

ANDERSON, JOHN R.; see ORF, LEIGH G.; 1244–1258

ANDERSON, STEPHEN L.; see ANDERSON, JEFFREY L.; 2741–2758

ANNAMALAI, H.; SLINGO, J. M.; SPERBER, K. R.; HODGES, K.; The Mean Evolution and Variability of the Asian Summer Monsoon: Comparison of ECMWF and NCEP–NCAR Reanalyses, 1157–1186

ARMENGAUD, ALEXANDRE; see HOURDIN, FRÉDÉRIC; 822–837

ARRITT, R. W.; see SEGAL, M.; 1687–1692

ATGER, FRÉDÉRIC; The Skill of Ensemble Prediction Systems, 1941–1953

ATKINS, NOLAN T.; WEISMAN, MORRIS L.; WICKER, LOUIS J.; The Influence of Preexisting Boundaries on Supercell Evolution, 2910–2927

AVILA, LIXION A.; see PASCH, RICHARD J.; 581–610

BANTA, ROBERT M.; see DARBY, LISA S.; 2062–2081

BARCILON, ALBERT; see LI, ZHIJIN; 879–900

BAUMHEFNER, DAVID P.; see COLUCCI, STEPHEN J.; 1538–1550

BENTSEN, M.; EVENSEN, G.; DRANGE, H.; JENKINS, A. D.; Coordinate Transformation on a Sphere Using Conformal Mapping, 2733–2740

BERBERY, ERNESTO H.; RASMUSSON, EUGENE M.; Mississippi Moisture Budgets on Regional Scales, 2654–2673

BERGOT, THIERRY; HELLO, GWENAËLLE; JOLY, ALAIN; MALARDEL, SYLVIE; Adaptive Observations: A Feasibility Study, 743–765

BIELLI, SOLINE; ROUX, FRANK; Initialization of a Cloud-Resolving Model with Airborne Doppler Radar Observations of an Oceanic Tropical Convective System, 1038–1055

BISHOP, CRAIG; see CHEN, CHAING; 258–263

BOOTHE, MARK A.; see CHEN, JENG-MING; 89–102

BOOTHE, MARK A.; see ELSBERRY, RUSSELL L.; 1912–1919

BORMANN, NIELS; MARKS, CRISPIN J.; Mesoscale Rainfall Forecasts over New Zealand during SALPEX96: Characterization and Sensitivity Studies, 2880–2893

BOSART, LANCE F.; see LACKMANN, GARY M.; 2777–2795

BOUSQUET, OLIVIER; see CHONG, MICHEL; 1145–1156

BRILL, KEITH F.; see MATHUR, MUKUT B.; 5–25

BROGNIEZ, GÉRARD; see SAUVAGE, LAURENT; 486–503

BROGNIEZ, GÉRARD; see CHEPFER, HÉLÈNE; 504–519

BROMWICH, DAVID H.; see CHEN, QIU-SHI; 145–172

BROOKS, HAROLD E.; see STENSRUD, DAVID J.; 433–446

BRÜMMER, BURGHARD; see MÜLLER, GERD; 363–380

BUIZZA, ROBERTO; see MOLTENI, FRANCO; 2346–2358

BURGERS, GERRIT; see VAN OLDENBORGH, GEERT JAN; 1477–1495

BURPEE, ROBERT W.; see DODGE, PETER; 987–1004

BURROWS, WILLIAM R.; see WILSON, LAURENCE J.; 956–970

CARR, LESTER E., III; see CHEN, JENG-MING; 89–102

CARRERA, MARCO L.; GYAKUM, JOHN R.; ZHANG, DA-LIN; A Numerical Case Study of Secondary Marine Cyclogenesis Sensitivity to Initial Error and Varying Physical Processes, 641–660

CARTWRIGHT, TINA J.; RAY, PETER S.; Radar-Derived Estimates of Latent Heating in the Subtropics, 726–742

CASTELLO, CRIS; see GROTJAHN, RICHARD; 1089–1095

CAYA, DANIEL; LAPRISE, RENÉ; A Semi-Implicit Semi-Lagrangian Regional Climate Model: The Canadian RCM, 341–362

CAYLOR, I. J.; see HEYMSFIELD, G. M.; 2928–2950

CECIL, DANIEL J.; ZIPSER, EDWARD J.; Relationships between Tropical Cyclone Intensity and Satellite-Based Indicators of Inner Core Convection: 85-GHz Ice-Scattering Signature and Lightning, 103–123

CHAN, JOHNNY C. L.; KWOK, ROGER H. F.; Tropical Cyclone Genesis in a Global Numerical Weather Prediction Model, 611–624

CHAN, JOHNNY C. L.; see LI, Y. S.; 1021–1037

CHAN, JOHNNY C. L.; see CHEUNG, KEVIN K. W.; 1229–1243

CHAN, JOHNNY C. L.; see CHEUNG, KEVIN K. W.; 2617–2640

CHAN, JOHNNY C. L.; see LIU, K. S.; 2992–3001

CHANG, ALFRED T. C.; CHIU, LONG S.; Nonsystematic Errors of Monthly Oceanic Rainfall Derived from SSM/I, 1630–1638

CHANG, PAO-LIANG; see LEE, WEN-CHAU; 2419–2439

CHAO, YI; see HU, DINGMING; 706–725

CHARNEY, JOSEPH J.; FRITSCH, J. MICHAEL; Discrete Frontal Propagation in a Nonconvective Environment, 2083–2101

CHASE, T. N.; see PIELKE, R. A., SR.; 1663–1673

CHAUVIN, F.; see STEPHENSON, D. B.; 1954–1966

CHEN, CHAING; BISHOP, CRAIG; *Reply, 258–263

CHEN, GEORGE TAI-JEN; LIN, KUO-CHIN; A Diagnostic Case Study of a Winter Low-Level Front over Southern China, 1096–1107

CHEN, JENG-MING; ELSBERRY, RUSSELL L.; BOOTHE, MARK A.; CARR, LESTER E., III; A Simple Statistical-Synoptic Track Prediction Technique for Western North Pacific Tropical Cyclones, 89–102

CHEN, QIU-SHI; BROMWICH, DAVID H.: An Equivalent Isobaric Geopotential Height and Its Application to Synoptic Analysis and a Generalized ú Equation in ó Coordinates, 145–172
CHEN, TSING-CHANG; WENG, SHU-PING; Interannual and Intraseasonal Variations in Monsoon Depressions and Their Westward-Propagating Predecessors, 1005–1020
CHEN, YI-LENG; see LI, JUN; 2674–2692
CHENG, HSIU-JU; see WU, CHUN-CHIEH; 3003–3031
CHEPFER, HÉLÈNE; see SAUVAGE, LAURENT; 486–503
CHEPFER, HÉLÈNE; BROGNIEZ, GÉRARD; SAUVAGE, LAURENT; FLAMANT, PIERRE H.; TROUILLET, VINCENT; PELON, JACQUES; Remote Sensing of Cirrus Radiative Parameters during EUCREX'94. Case Study of 17 April 1994. Part II: Microphysical Models, 504–519
CHEUNG, KEVIN K. W.; CHAN, JOHNNY C. L.; Ensemble Forecasting of Tropical Cyclone Motion Using a Barotropic Model. Part I: Perturbations of the Environment, 1229–1243
CHEUNG, KEVIN K. W.; CHAN, JOHNNY C. L.; Ensemble Forecasting of Tropical Cyclone Motion Using a Barotropic Model. Part II: Perturbations of the Vortex, 2617–2640
CHIU, LONG S.; see CHANG, ALFRED T. C.; 1630–1638
CHONG, MICHEL; BOUSQUET, OLIVIER; A Mesovortex within a Near-Equatorial Mesoscale Convective System during TOGA COARE, 1145–1156
CLARK, W. L.; see GRIVET-TALOCIA, S.; 1613–1629
COLLE, BRIAN A.; MASS, CLIFFORD F.; SMULL, BRADLEY F.; An Observational and Numerical Study of a Cold Front Interacting with the Olympic Mountains during COAST IOP 5, 1310–1334
COLUCCI, STEPHEN J.; BAUMHEFNER, DAVID P.; KONRAD, CHARLES E., II; Numerical Prediction of a Cold-Air Outbreak: A Case Study with Ensemble Forecasts, 1538–1550
COOK, K. H.; see LENTERS, J. D.; 409–431
COOPER, KEVIN A.; see KRISTOVICH, DAVID A. R.; 2895–2909
CROOK, N. ANDREW; see TUCKER, DONNA F.; 1259–1273
DAILEY, PETER S.; FOVELL, ROBERT G.; Numerical Simulation of the Interaction between the Sea-Breeze Front and Horizontal Convective Rolls. Part I: Offshore Ambient Flow, 858–878
DARBY, LISA S.; NIELSEN, WILLIAM D.; BANTA, ROBERT M.; Multiscale Analysis of a Meso-β Frontal Passage in the Complex Terrain of the Colorado Front Range, 2062–2081
DA SILVA, ARLINDO M.; see DEE, DICK P.; 1822–1834
DA SILVA, ARLINDO M.; see DEE, DICK P.; 1835–1849
DEBLONDE, GODELIEVE; Variational Assimilation of SSM/I Total Precipitable Water Retrievals in the CMC Analysis System, 1458–1476
DEE, DICK P.; DA SILVA, ARLINDO M.; Maximum-Likelihood Estimation of Forecast and Observation Error Covariance Parameters. Part I: Methodology, 1822–1834
DEE, DICK P.; GASPARI, GREG; REDDER, CHRIS; RUKHOVETS, LEONID; DA SILVA, ARLINDO M.; Maximum-Likelihood Estimation of Forecast and Observation Error Covariance Parameters. Part II: Applications, 1835–1849
DEL SOLE, TIMOTHY; HOU, ARTHUR Y.; Empirical Correction of a Dynamical Model. Part I: Fundamental Issues, 2533–2545
DEMARIA, MARK; see JONES, ROBERT W.; 1586–1598
DEMIRTAS, MERAL; THORPE, ALAN J.; Sensitivity of Short-Range Weather Forecasts to Local Potential Vorticity Modifications, 922–939
DENG, SHIUNG-MING; see LEE, WEN-CHAU; 2419–2439
DENHOLM-PRICE, J. C. W.; REES, J. M.; Detecting Waves Using an Array of Sensors, 57–69
DENNETT, R. D.; see GRIVET-TALOCIA, S.; 1613–1629
DERICKSON, RUSSELL G.; see KRISTOVICH, DAVID A. R.; 2895–2909
DEWITT, DAVID G.; SCHNEIDER, EDWIN K.; The Processes Determining the Annual Cycle of Equatorial Sea Surface Temperature: A Coupled General Circulation Model Perspective, 381–395
DEWITT, DAVID G.; see SCHNEIDER, EDWIN K.; 1187–1207
DOBLAS-REYES, F. J.; see STEPHENSON, D. B.; 1954–1966
DODGE, PETER; BURPEE, ROBERT W.; MARKS, FRANK D., JR.; The Kinematic Structure of a Hurricane with Sea Level Pressure Less Than 900 mb, 987–1004
DORMAN, C. E.; ROGERS, D. P.; NUSS, W.; THOMPSON, W. T.; Adjustment of the Summer Marine Boundary Layer around Point Sur, California, 2143–2159
DOSWELL, CHARLES A., III; see SPENCER, PHILLIP L.; 279–291
DRANGE, H.; see BENTSEN, M.; 2733–2740
DRITSCHEL, DAVID G.; POLVANI, LORENZO M.; MOHEBALHOJEH, ALI R.; The Contour-Advective Semi-Lagrangian Algorithm for the Shallow Water Equations, 1551–1565
DROEGEMEIER, KELVIN K.; see RAO, P. ANIL; 1808–1821
DROEGEMEIER, KELVIN K.; see GAO, JIDONG; 2128–2142
DROEGEMEIER, KELVIN K.; see PARK, SEON KI; 2180–2196
DU, JUN; see STENSRUD, DAVID J.; 433–446
DU, JUN; see MULLEN, STEVEN L.; 1674–1686
ECKERT, CHRISTIAN; see VAN OLDENBORGH, GEERT JAN; 1477–1495
EGGER, JOSEPH; *Numerical Generation of Entropies, 2211–2216
EINAUDI, F.; see GRIVET-TALOCIA, S.; 1613–1629
ELSBERRY, RUSSELL L.; see CHEN, JENG-MING; 89–102
ELSBERRY, RUSSELL L.; BOOTHE, MARK A.; ULSES, GREG A.; HARR, PATRICK A.; *Statistical Postprocessing of NOGAPS Tropical Cyclone Track Forecasts, 1912–1919
ERLINGSSON, VIDAR; see THORSTEINSSON, SIGURDUR; 1072–1088
ERRICO, RONALD M.; see REYNOLDS, CAROLYN A.; 2309–2323
EVENSEN, G.; see BENTSEN, M.; 2733–2740
FERRIER, BRAD S.; see HALVERSON, JEFFREY B.; 1208–1228
FINKE, ULLI; Space–Time Correlations of Lightning Distributions, 1850–1861
FLAMANT, PIERRE H.; see SAUVAGE, LAURENT; 486–503
FLAMANT, PIERRE H.; see CHEPFER, HÉLÈNE; 504–519
FOVELL, ROBERT G.; see DAILEY, PETER S.; 858–878
FRANK, WILLIAM M.; RITCHIE, ELIZABETH A.; Effects of Environmental Flow upon Tropical Cyclone Structure, 2044–2061
FRANKE, RICHARD; Three-Dimensional Covariance Functions for NOGAPS Data, 2293–2308
FRANKLIN, JAMES L.; see SHAPIRO, LLOYD J.; 124–131
FRITSCH, J. MICHAEL; see CHARNEY, JOSEPH J.; 2083–2101
FUELBERG, HENRY E.; see RAO, P. ANIL; 1808–1821
FUENTES-GEA, VICENTE; see JAZCILEVICH, ARON; 2281–2292
GALLUS, WILLIAM A., JR.; SEGAL, MOTE; Diabatic Effects on Late-Winter Cold Front Evolution: Conceptual and Numerical Model Evaluations, 1518–1537
GAO, JIDONG; XUE, MING; SHAPIRO, ALAN; DROEGEMEIER, KELVIN K.; A Variational Method for the Analysis of Three-Dimensional Wind Fields from Two Doppler Radars, 2128–2142
GARREAUD, RENÉ D.; Multiscale Analysis of the Summertime Precipitation over the Central Andes, 901–921
GARREAUD, RENÉ D.; Cold Air Incursions over Subtropical and Tropical South America: A Numerical Case Study, 2823–2853
GASPARI, GREG; see DEE, DICK P.; 1835–1849
GAVRILOV, MILIVOJ B.; TOVÍŠ, IVANA A.; *Dispersion Characteristics of Discrete Quasigeostrophic Modes, 2197–2203
GELEYN, JEAN-FRANÇOIS; see JANISKOVÁ, MARTA; 26–45
GHAN, STEVEN J.; LEUNG, L. RUBY; MCCAA, JAMES; A Comparison of Three Different Modeling Strategies for Evaluating Cloud and Radiation Parameterizations, 1967–1984
GIERING, RALF; see VAN OLDENBORGH, GEERT JAN; 1477–1495
GINIS, I.; see ROWLEY, C.; 1879–1896
GIRALDO, FRANCIS X.; *Trajectory Calculations for Spherical Geodesic Grids in Cartesian Space, 1651–1662
GLICK, JOHN; see SHINODA, TOSHIAKI; 678–693
GRIVET-TALOCIA, S.; EINAUDI, F.; CLARK, W. L.; DENNETT, R. D.; NASTROM, G. D.; VANZANDT, T. E.; A 4-yr Climatology of Pressure Disturbances Using a Barometer Network in Central Illinois, 1613–1629

GROTJAHN, RICHARD; HODYSS, DANIEL; CASTELLO, CRIS; Do Frontal Cyclones Change Size? Observed Widths of North Pacific Lows, 1089–1095
GUAN, SHUCAI; see JACKSON, PETER L.; 535–550
GUARD, CHARLES P.; see LANDER, MARK A.; 1274–1300
GUTOWSKI, WILLIAM; see PAN, ZAITAO; 308–321
GYAKUM, JOHN; see ZHANG, DA-LIN; 1725–1744
GYAKUM, JOHN; see ZHANG, DA-LIN; 1745–1760
GYAKUM, JOHN R.; see HENDERSON, JOHN M.; 292–307
GYAKUM, JOHN R.; see CARRERA, MARCO L.; 641–660
GYAKUM, JOHN R.; see HUO, ZONGHUI; 2546–2561
GYAKUM, JOHN R.; see HUO, ZONGHUI; 2563–2575
HALVERSON, J. B.; see HEYMSFIELD, G. M.; 2928–2950
HALVERSON, JEFFREY B.; FERRIER, BRAD S.; RICKENBACH, THOMAS M.; SIMPSON, JOANNE; TAO, WEI-KUO; An Ensemble of Convective Systems on 11 February 1993 during TOGA COARE: Morphology, Rainfall Characteristics, and Anvil Cloud Interactions, 1208–1228
HARR, PATRICK A.; see ELSBERRY, RUSSELL L.; 1912–1919
HELLO, GWENAELLE; see BERGOT, THIERRY; 743–765
HENDERSON, JOHN M.; LACKMANN, GARY M.; GYAKUM, JOHN R.; An Analysis of Hurricane Opal's Forecast Track Errors Using Quasigeostrophic Potential Vorticity Inversion, 292–307
HENDON, HARRY H.; see SHINODA, TOSHIAKI; 678–693
HEYMSFIELD, G. M.; HALVERSON, J. B.; CAYLOR, I. J.; A Wintertime Gulf Coast Squall Line Observed by EDOP Airborne Doppler Radar, 2928–2950
HILL, C. N.; see ADCROFT, A. J.; 1928–1936
HJELMFELT, MARK R.; see KRISTOVICH, DAVID A. R.; 2895–2909
HO, CHANG-HOI; see KANG, IN-SIK; 322–340
HODGES, K.; see ANNAMALAI, H.; 1157–1186
HODGES, K. I.; Extension of Spherical Nonparametric Estimators to Nonisotropic Kernels: An Oceanographic Application, 214–227
HODGES, K. I.; Adaptive Constraints for Feature Tracking, 1362–1373
HODYSS, DANIEL; see GROTJAHN, RICHARD; 1089–1095
HOINKA, KLAUS P.; Temperature, Humidity, and Wind at the Global Tropopause, 2248–2265
HOLLAND, GREG J.; see RITCHIE, ELIZABETH A.; 2027–2043
HOLTSLAG, A. A. M.; see TIM, A. B. C.; 625–640
HORST, THOMAS W.; see WECKWERTH, TAMMY M.;2160–2179
HOU, ARTHUR Y.; see DELSOLE, TIMOTHY; 2533–2545
HOURDIN, FREDERIC; ARMENGAUD, ALEXANDRE; The Use of Finite-Volume Methods for Atmospheric Advection of Trace Species. Part I: Test of Various Formulations in a General Circulation Model, 822–837
HOUSTON, SAMUEL H.; see POWELL, MARK D.; 1706–1710
HOUTEKAMER, P. L.; MITCHELL, HERSCHEL L.; *Reply, 1378–1379
HU, DINGMING; CHAO, YI; A Global Isopycnal OGCM: Validations Using Observed Upper-Ocean Variabilities during 1992–93, 706–725
HUANG, BOHUA; see SCHNEIDER, EDWIN K.; 1187–1207
HUANG, XIANG-YU; A Generalization of Using an Adjoint Model in Intermittent Data Assimilation Systems, 766–787
HUFFINES, GARY R.; see ORVILLE, RICHARD E.; 2693–2703
HUNKE, E. C.; ZHANG, Y.; A Comparison of Sea Ice Dynamics Models at High Resolution, 396–408
HUO, ZONGHUI; ZHANG, DA-LIN; GYAKUM, JOHN R.; Interaction of Potential Vorticity Anomalies in Extratropical Cyclogenesis. Part I: Static Piecewise Inversion, 2546–2561
HUO, ZONGHUI; ZHANG, DA-LIN; GYAKUM, JOHN R.; Interaction of Potential Vorticity Anomalies in Extratropical Cyclogenesis. Part II: Sensitivity to Initial Perturbations, 2563–2575
IDONE, VINCENT; see MOLINARI, JOHN; 520–534
INNOCENTINI, VALDIR; A Successive Substitution Method for the Evaluation of Trajectories Approximating the Parcel Path by a Linear Function of Space and Time, 1639–1650
IOANNIDOU, LILY; PEDDER, MIKE A.; Three-Dimensional Applications of a Successive Corrections Analysis Scheme to Mesoscale Observations, 236–251
JACKSON, PETER L.; REASON, CHRIS J. C.; GUAN, SHUCAI; Numerical Modeling of a Coastal Trapped Disturbance. Part II: Structure and Dynamics, 535–550
JAKOB, CHRISTIAN; see KLEIN, STEPHEN A.; 2514–2531
JANISKOVÁ, MARTA; THEPAUT, JEAN-NOEL; GELEYN, JEAN-FRANÇOIS; Simplified and Regular Physical Parameterizations for Incremental Four-Dimensional Variational Assimilation, 26–45
JANISH, PAUL R.; see SPENCER, PHILLIP L.; 279–291
JAZCILEVICH, ARÓN; FUENTES-GEA, VICENTE; The Conservative Random Choice Method for the Numerical Solution of the Advection Equation, 2281–2292
JENKINS, A. D.; see BENTSEN, M.; 2733–2740
JOLY, ALAIN; see BERGOT, THIERRY; 743–765
JONES, PHILIP W.; *First- and Second-Order Conservative Remapping Schemes for Grids in Spherical Coordinates, 2204–2210
JONES, ROBERT W.; DEMARIA, MARK; Further Studies of the Optimization of a Hurricane Track Prediction Model Using the Adjoint Equations, 1586–1598
JOU, BEN JONG-DAO; see YU, CHENG-KU; 838–857
JOU, BEN JONG-DAO; see LEE, WEN-CHAU; 2419–2439
KANG, IN-SIK; HO, CHANG-HOI; LIM, YOUNG-KWON; LAU, K.-M.; Principal Modes of Climatological Seasonal and Intraseasonal Variations of the Asian Summer Monsoon, 322–340
KARYAMPUDI, V. MOHAN; see ALEXANDER, G. DAVID; 1433–1457
KELLY, G.; see TOMASSINI, M.; 971–986
KESSLER, EDWIN; see SANDERS, FREDERICK; 1125–1133
KEYSER, DANIEL; see LACKMANN, GARY M.; 2777–2795
KILADIS, GEORGE N.; see MATTHEWS, ADRIAN J.; 661–677
KINTER, JAMES L., III; see SCHNEIDER, EDWIN K.; 1187–1207
KIRTMAN, BEN P.; see SCHNEIDER, EDWIN K.; 1187–1207
KLEEMAN, RICHARD; MOORE, ANDREW M.; A New Method for Determining the Reliability of Dynamical ENSO Predictions, 694–705
KLEIN, STEPHEN A.; JAKOB, CHRISTIAN; Validation and Sensitivities of Frontal Clouds Simulated by the ECMWF Model, 2514–2531
KOCH, STEVEN E.; *Comments on "Numerical Simulations of an Observed Narrow Cold-Frontal Rainband," 252–257
KOCH, STEVEN E.; SIEDLARZ, LEANNE M.; Mesoscale Gravity Waves and Their Environment in the Central United States during STORM-FEST, 2854–2879
KONRAD, CHARLES E., II; see COLUCCI, STEPHEN J.; 1538–1550
KOWOL-SANTEN, J.; see RAVETTA, F.; 2641–2653
KRISHNAMURTI, T. N.; see ZHANG, Z.; 447–469
KRISTJÁNSSON, JÓN EGILL; see THORSTEINSSON, SIGURÐUR; 1072–1088
KRISTOVICH, DAVID A. R.; LAIRD, NEIL F.; HJELMFELT, MARK R.; DERICKSON, RUSSELL G.; COOPER, KEVIN A.; Transitions in Boundary Layer Meso-â Convective Structures: An Observational Case Study, 2895–2909
KRZYSZTOFOWICZ, ROMAN; Probabilities for a Period and Its Subperiods: Theoretical Relations for Forecasting, 228–235
KUMAR, K. RUPA; see STEPHENSON, D. B.; 1954–1966
KWOK, ROGER H. F.; see CHAN, JOHNNY C. L.; 611–624
LACKMANN, GARY M.; see HENDERSON, JOHN M.; 292–307
LACKMANN, GARY M.; KEYSER, DANIEL; BOSART, LANCE F.; Energetics of an Intensifying Jet Streak during the Experiment on Rapidly Intensifying Cyclones over the Atlantic (ERICA), 2777–2795
LAIRD, NEIL F.; Observation of Coexisting Mesoscale Lake-Effect Vortices over the Western Great Lakes, 1137–1141
LAIRD, NEIL F.; see KRISTOVICH, DAVID A. R.; 2895–2909
LAKSHMANAN, V.; see MARZBAN, CAREN; 1134–1136
LANDER, MARK A.; A Tropical Cyclone with an Enormous Central Cold Cover, 132–136
LANDER, MARK A.; A Tropical Cyclone with a Very Large Eye, 137–142
LANDER, MARK A.; TREHUBENKO, ERIC J.; GUARD, CHARLES P.; Eastern Hemispheric Tropical Cyclones of 1996, 1274–1300
LANZINGER, ANDREAS; see WILSON, LAURENCE J.; 956–970
LAPRISE, RENE; see CAYA, DANIEL; 341–362

LAU, K.-M.; see KANG, IN-SIK; 322–340
LAU, NGAR-CHEUNG; NATH, MARY JO; Observed and GCM-Simulated Westward-Propagating, Planetary-Scale Fluctuations with Approximately Three-Week Periods, 2324–2345
LAWRENCE, MILES B.; Eastern North Pacific Hurricane Season of 1997, 2440–2454
LEE, A. C. L.; see ALEXANDER, G. DAVID; 1433–1457
LEE, WEN-CHAU; JOU, BEN JONG-DAO; CHANG, PAO-LIANG; DENG, SHIUNG-MING; Tropical Cyclone Kinematic Structure Retrieved from Single-Doppler Radar Observations. Part I: Interpretation of Doppler Velocity Patterns and the GBVTD Technique, 2419–2439
LEMONE, MARGARET A.; see WU, XIAOQING; 2503–2513
LENTERS, J. D.; COOK, K. H.; Summertime Precipitation Variability over South America: Role of the Large-Scale Circulation, 409–431
LERMUSIAUX, P. F. J.; ROBINSON, A. R.; Data Assimilation via Error Subspace Statistical Estimation. Part I: Theory and Schemes, 1385–1407
LERMUSIAUX, P. F. J.; Data Assimilation via Error Subspace Statistical Estimation. Part II: Middle Atlantic Bight Shelfbreak Front Simulations and ESSE Validation, 1408–1432
LEUNG, L. RUBY; see GHAN, STEVEN J.; 1967–1984
LI, JUN; CHEN, YI-LENG; A Case Study of Nocturnal Rain Showers over the Windward Coastal Region of the Island of Hawaii, 2674–2692
LI, Y. S.; CHAN, JOHNNY C. L.; Momentum TransportsAssociated with Tropical Cyclone Recurvature, 1021–1037
LI, ZHIJIN; BARCILON, ALBERT; NAVON, I. M.; Study of Block Onset Using Sensitivity Perturbations in Climatological Flows, 879–900
LIM, YOUNG-KWON; see KANG, IN-SIK; 322–340
LIN, KUO-CHIN; see CHEN, GEORGE TAI-JEN; 1096–1107
LIPTON, ALAN E.; MODICA, GEORGE D.; Assimilation of Visible-Band Satellite Data for Mesoscale Forecasting in Cloudy Conditions, 265–278
LIPTON, ALAN E.; see RUGGIERO, FRANK H.; 802–821
LISTON, G. E.; see PIELKE, R. A., SR.; 1663–1673
LIU, CHANGHAI; see MONCRIEFF, MITCHELL W.; 2455–2464
LIU, K. S.; CHAN, JOHNNY C. L.; Size of Tropical Cyclones as Inferred from *ERS-1* and *ERS-2* Data, 2992–3001
LIU, YUBAO; see ZHANG, DA-LIN; 1711–1721
LIU, YUBAO; ZHANG, DA-LIN; YAU, M. K.; A Multiscale Numerical Study of Hurricane Andrew (1992). Part II: Kinematics and Inner-Core Structures, 2597–2616
LOTT, FRANÇOIS; Alleviation of Stationary Biases in a GCM through a Mountain Drag Parameterization Scheme and a Simple Representation of Mountain Lift Forces, 788–801
LYONS, W. A.; see PIELKE, R. A., SR.; 1663–1673
MADALA, RANGARAO V.; see RUGGIERO, FRANK H.; 802–821
MALARDEL, SYLVIE; see BERGOT, THIERRY; 743–765
MARKS, CRISPIN J.; see BORMANN, NIELS; 2880–2893
MARKS, FRANK D., JR.; see DODGE, PETER; 987–1004
MARQUES, R. F. C.; RAO, V. BRAHMANANDA; A Diagnosis of a Long-Lasting Blocking Event over the Southeast Pacific Ocean, 1761–1776
MARSHALL, J. C.; see ADCROFT, A. J.; 1928–1936
MARTIN, D. W.; see SEGAL, M.; 1687–1692
MARTIN, JONATHAN E.; Quasigeostrophic Forcing of Ascent in the Occluded Sector of Cyclones and the Trowal Airstream, 70–88
MARTIN, JONATHAN E.; The Separate Roles of Geostrophic Vorticity and Deformation in the Midlatitude Occlusion Process, 2404–2418
MARZBAN, CAREN; LAKSHMANAN, V.; *On the Uniqueness of Gandin and Murphy's Equitable Performance Measures, 1134–1136
MASS, CLIFFORD F.; see COLLE, BRIAN A.; 1310–1334
MATHUR, MUKUT B.; BRILL, KEITH F.; SEMAN, CHARLES J.; Evolution of Slantwise Vertical Motions in NCEP's Mesoscale Eta Model, 5–25
MATTHEWS, ADRIAN J.; KILADIS, GEORGE N.; The Tropical–Extratropical Interaction between High-Frequency Transients and the Madden–Julian Oscillation, 661–677
MAY, PETER T.; RAJOPADHYAYA, DEEPAK K.; Vertical Velocity Characteristics of Deep Convection over Darwin, Australia, 1056–1071
MAY, PETER T.; Thermodynamic and Vertical Velocity Structure of Two Gust Fronts Observed with a Wind Profiler/RASS during MCTEX, 1796–1807
MCCAA, JAMES; see GHAN, STEVEN J.; 1967–1984
MCDONALD, A.; An Examination of Alternative Extrapolations to Find the Departure Point Position in a "Two-Time-Level" Semi-Lagrangian Integration, 1985–1993
MEYERS, S. D.; O'BRIEN, J. J.; THELIN, E.; Reconstruction of Monthly SST in the Tropical Pacific Ocean during 1868–1993 Using Adaptive Climate Basis Functions, 1599–1612
MITCHELL, HERSCHEL L.; see HOUTEKAMER, P. L.; 1378–1379
MO, KINGTSE C.; Alternating Wet and Dry Episodes over California and Intraseasonal Oscillations, 2759–2776
MODICA, GEORGE D.; see LIPTON, ALAN E.; 265–278
MOHEBALHOJEH, ALI R.; see DRITSCHEL, DAVID G.; 1551–1565
MOLINARI, JOHN; MOORE, PAUL; IDONE, VINCENT; Convective Structure of Hurricanes as Revealed by Lightning Locations, 520–534
MOLTENI, FRANCO; BUIZZA, ROBERTO; Validation of the ECMWF Ensemble Prediction System Using Empirical Orthogonal Functions, 2346–2358
MONCRIEFF, MITCHELL W.; LIU, CHANGHAI; Convection Initiation by Density Currents: Role of Convergence, Shear, and Dynamical Organization, 2455–2464
MONTGOMERY, MICHAEL T.; see REASOR, PAUL D.; 46–56
MOORE, ANDREW M.; see KLEEMAN, RICHARD; 694–705
MOORE, G. W. K.; see RENFREW, IAN A.; 2379–2394
MOORE, PAUL; see MOLINARI, JOHN; 520–534
MORGAN, MICHAEL C.; Using Piecewise Potential Vorticity Inversion to Diagnose Frontogenesis. Part I: A Partitioning of the Q Vector Applied to Diagnosing Surface Frontogenesis and Vertical Motion, 2796–2821
MULLEN, STEVEN L.; DU, JUN; SANDERS, FREDERICK; *The Dependence of Ensemble Dispersion on Analysis–Forecast Systems: Implications to Short-Range Ensemble
MÜLLER, GERD; BRÜMMER, BURGHARD; ALPERS, WERNER; Roll Convection within an Arctic Cold-Air Outbreak: Interpretation of In Situ Aircraft Measurements and Spaceborne SAR Imagery by a Three-Dimensional Atmospheric Model, 363–380
Forecasting of Precipitation, 1674–1686
NASTROM, G. D.; see GRIVET-TALOCIA, S.; 1613–1629
NATH, MARY JO; see LAU, NGAR-CHEUNG; 2324–2345
NAVON, I. M.; see LI, ZHIJIN; 879–900
NAVON, I. M.; see ZHU, YANQIU; 1497–1517
NAVON, I. M.; see YANG, YAN; 2359–2378
NEDELJKOVIC, D.; see RAVETTA, F.; 2641–2653
NEFF, WILLIAM D.; see DARBY, LISA S.; 2062–2081
NEIMAN, PAUL J.; WAKIMOTO, ROGER M.; The Interaction of a Pacific Cold Front with Shallow Air Masses East of the Rocky Mountains, 2102–2127
NIELSEN-GAMMON, JOHN W.; SCHULTZ, DAVID M.; *Comments on "The Intensification of the Low-Level Jet during the Development of Mesoscale Convective Systems on a Mei-Yu Front," 2227–2231
NORQUIST, DONALD C.; Cloud Predictions Diagnosed from Mesoscale Weather Model Forecasts, 2465–2483
NUSS, W.; see DORMAN, C. E.; 2143–2159
O'BRIEN, J. J.; see MEYERS, S. D.; 1599–1612
OERLEMANS, JOHANNES; see VAN LIPZIG, NICOLE P. M.; 1994–2011
OLSON, WILLIAM S.; see ALEXANDER, G. DAVID; 1433–1457
ORF, LEIGH G.; ANDERSON, JOHN R.; A Numerical Study of Traveling Microbursts, 1244–1258
ORVILLE, RICHARD E.; *Comments on "Large Peak Current Cloud-to-Ground Lightning Flashes during the Summer Months in the Contiguous United States," 1937–1938

ORVILLE, RICHARD E.; HUFFINES, GARY R.; Lightning Ground Flash Measurements over the Contiguous United States: 1995–97, 2693–2703
OSCHLIES, ANDREAS; *On Spurious Interactions among a Mixed Layer Model, Convective Adjustment, and Isopycnal Mixing in Ocean Circulation Models, 1920–1927
PAN, ZAITAO; TAKLE, EUGENE; GUTOWSKI, WILLIAM; TURNER, RICHARD; Long Simulation of Regional Climate as a Sequence of Short Segments, 308–321
PARK, SEON KI; DROEGEMEIER, KELVIN K.; Sensitivity Analysis of a Moist 1D Eulerian Cloud Model Using Automatic Differentiation, 2180–2196
PASCH, RICHARD J.; AVILA, LIXION A.; Atlantic Hurricane Season of 1996, 581–610
PEDDER, MIKE A.; see IOANNIDOU, LILY; 236–251
PELON, JACQUES; see SAUVAGE, LAURENT; 486–503
PELON, JACQUES; see CHEPFER, HELENE; 504–519
PEZZULLI, S.; see STEPHENSON, D. B.; 1954–1966
PIELKE, R. A., SR.; WALKO, R. L.; STEYAERT, L. T.; VIDALE, P. L.; LISTON, G. E.; LYONS, W. A.; CHASE, T. N.; *The Influence of Anthropogenic Landscape Changes on Weather in South Florida, 1663–1673
POLAVARAPU, S.; see TANGUAY, M.; 551–564
POLVANI, LORENZO M.; see DRITSCHEL, DAVID G.; 1551–1565
POWELL, DONNA M.; see ZEHNDER, JOSEPH A.; 1566–1585
POWELL, MARK D.; HOUSTON, SAMUEL H.; *Comments on "A Multiscale Numerical Study of Hurricane Andrew (1992). Part I: Explicit Simulation and Verification," 1706–1710
PYTHAROULIS, IOANNIS; THORNCROFT, CHRIS; The Low-Level Structure of African Easterly Waves in 1995, 2266–2280
QIAN, LIYING; see ROZBICKI, JOHN J.; 1347–1361
RABIN, R. M.; see SEGAL, M.; 1687–1692
RADEVA, EKATERINA; see ZHANG, DA-LIN; 1725–1744
RADEVA, EKATERINA; see ZHANG, DA-LIN; 1745–1760
RAJOPADHYAYA, DEEPAK K.; see MAY, PETER T.; 1056–1071
RAMAGE, C. S.; SCHROEDER, THOMAS A.; *Trade Wind Rainfall atop Mount Waialeale, Kauai, 2217–2226
RAMAN, SETHU; see RUGGIERO, FRANK H.; 802–821
RAO, P. ANIL; FUELBERG, HENRY E.; DROEGEMEIER, KELVIN K.; High-Resolution Modeling of the Cape Canaveral Area Land–Water Circulations and Associated Features, 1808–1821
RAO, V. BRAHMANANDA; see MARQUES, R. F. C.; 1761–1776
RAPPAPORT, EDWARD N.; Atlantic Hurricane Season of 1997, 2012–2026
RASMUSSON, EUGENE M.; see BERBERY, ERNESTO H.; 2654–2673
RAVETTA, F.; ANCELLET, G.; KOWOL-SANTEN, J.; WILSON, R.; NEDELJKOVIC, D.; Ozone, Temperature, and Wind Field Measurements in a Tropopause Fold: Comparison with a Mesoscale Model Simulation, 2641–2653
RAY, PETER S.; see CARTWRIGHT, TINA J.; 726–742
REAMES, FRED M.; ZAPOTOCNY, TOM H.; Inert Trace Constituent Transport in Sigma and Hybrid Isentropic–Sigma Models. Part I: Nine Advection Algorithms, 173–187
REAMES, FRED M.; ZAPOTOCNY, TOM H.; Inert Trace Constituent Transport in Sigma and Hybrid Isentropic–Sigma Models. Part II: Twelve Semi-Lagrangian Algorithms, 188–200
REASON, CHRIS J. C.; see JACKSON, PETER L.; 535–550
REASOR, PAUL D.; MONTGOMERY, MICHAEL T.; Diagnosing the QBO's Influence on Circumpolar Vortex Variability Using MSU Brightness Temperatures and MSU-Derived Winds, 46–56
REDDER, CHRIS; see DEE, DICK P.; 1835–1849
REES, J. M.; see DENHOLM-PRICE, J. C. W.; 57–69
RENFREW, IAN A.; MOORE, G. W. K.; An Extreme Cold-Air Outbreak over the Labrador Sea: Roll Vortices and Air–Sea Interaction, 2379–2394
RENWICK, JAMES A.; REVELL, MICHAEL J.; Blocking over the South Pacific and Rossby Wave Propagation, 2233–2247
REVELL, MICHAEL J.; see RENWICK, JAMES A.; 2233–2247
REYNOLDS, CAROLYN A.; ERRICO, RONALD M.; Convergence of Singular Vectors toward Lyapunov Vectors, 2309–2323
REYNOLDS, CAROLYN A.; A Comparison of Analysis and Forecast Correction Techiques: Impact of Negative Dissipation, 2576–2596
RICKENBACH, THOMAS M.; see HALVERSON, JEFFREY B.; 1208–1228
RICKENBACH, THOMAS M.; Cloud-Top Evolution of Tropical Oceanic Squall Lines from Radar Reflectivity and Infrared Satellite Data, 2951–2976
RITCHIE, ELIZABETH A.; HOLLAND, GREG J.; Large-Scale Patterns Associated with Tropical Cyclogenesis in the Western Pacific, 2027–2043
RITCHIE, ELIZABETH A.; see FRANK, WILLIAM M.; 2044–2061
ROBINSON, A. R.; see LERMUSIAUX, P. F. J.; 1385–1407
ROED, LARS PETTER; A Pointwise Energy Diagnostic Scheme for Multilayer, Nonisopycnic, Primitive Equation Ocean Models, 1897–1911
ROGERS, D. P.; see DORMAN, C. E.; 2143–2159
ROGERS, ERIC; see STENSRUD, DAVID J.; 433–446
ROPP, DAVID L.; see ZEHNDER, JOSEPH A.; 1566–1585
ROSSOW, WILLIAM B.; see WANG, JUNHONG; 2484–2502
ROSTING, BJORN; see THORSTEINSSON, SIGURDUR; 1072–1088
ROUHI, ALI; SCHULT, ROY; WRIGHT, JON; A New Time Stepping Method for the Solution of the Shallow Water Equations on a Rotating Sphere, 1862–1871
ROUX, FRANK; see BIELLI, SOLINE; 1038–1055
ROWLEY, C.; GINIS, I.; Implementation of a Mesh Movement Scheme in a Multiply Nested Ocean Model and Its Application to Air–Sea Interaction Studies, 1879–1896
ROYER, J. -F.; see STEPHENSON, D. B.; 1954–1966
ROZANOV, EUGENE V.; see ZUBOV, VLADIMIR A.; 1335–1346
ROZBICKI, JOHN J.; YOUNG, GEORGE S.; QIAN, LIYING; Test of a Convective Wake Parameterization in the Single-Column Version of CCM3, 1347–1361
ROZENDAAL, MARGARET; see WANG, JUNHONG; 2484–2502
RUGGIERO, FRANK H.; SASHEGYI, KEITH D.; LIPTON, ALAN E.; MADALA, RANGARAO V.; RAMAN, SETHU; Coupled Assimilation of Geostationary Satellite Sounder Data into a Mesoscale Model Using the Bratseth Analysis Approach, 802–821
RUKHOVETS, LEONID; see DEE, DICK P.; 1835–1849
SAMELSON, R. M.; The Vertical Structure of Linear Coastal-Trapped Disturbances, 201–213
SANDERS, FREDERICK; A Proposed Method of SurfaceMap Analysis, 945–955
SANDERS, FREDERICK; KESSLER, EDWIN; *Frontal Analysis in the Light of Abrupt Temperature Changes in a Shallow Valley, 1125–1133
SANDERS, FREDERICK; see MULLEN, STEVEN L.; 1674–1686
SANDERS, FREDERICK; A Short-Lived Cold Front in the Southwestern United States, 2395–2403
SASHEGYI, KEITH D.; see RUGGIERO, FRANK H.; 802–821
SAUNDERS, R.; see TOMASSINI, M.; 971–986
SAUVAGE, LAURENT; CHEPFER, HELENE; TROUILLET, VINCENT; FLAMANT, PIERRE H.; BROGNIEZ, GERARD; PELON, JACQUES; ALBERS, FRANCK; Remote Sensing of Cirrus Radiative Parameters during EUCREX'94. Case Study of 17 April 1994. Part I: Observations, 486–503
SAUVAGE, LAURENT; see CHEPFER, HELENE; 504–519
SCHLESINGER, MICHAEL E.; see ZUBOV, VLADIMIR A.; 1335–1346
SCHNEIDER, EDWIN K.; see DEWITT, DAVID G.; 381–395
SCHNEIDER, EDWIN K.; HUANG, BOHUA; ZHU, ZHENGXIN; DEWITT, DAVID G.; KINTER, JAMES L., III; KIRTMAN, BEN P.; SHUKLA, J.; Ocean Data Assimilation, Initialization, and Predictions of ENSO with a Coupled GCM, 1187–1207
SCHROEDER, THOMAS A.; see RAMAGE, C. S.; 2217–2226
SCHULT, ROY; see ROUHI, ALI; 1862–1871
SCHULTZ, DAVID M.; STEENBURGH, W. JAMES; The Formation of a Forward-Tilting Cold Front with Multiple Cloud Bands during Superstorm 1993, 1108–1124
SCHULTZ, DAVID M.; see NIELSEN-GAMMON, JOHN W.; 2227–2231

SCHULTZ, DAVID M.; SCHUMACHER, PHILIP N.: The Use and Misuse of Conditional Symmetric Instability, 2709–2732
SCHUMACHER, PHILIP N.: see SCHULTZ, DAVID M.: 2709–2732
SEGAL, M.; ANDERSON, C.; ARRITT, R. W.; RABIN, R. M.; MARTIN, D. W.: *Some Observations of the Clearing of Cumulus Clouds Downwind from Snow-Covered Areas, 1687–1692
SEGAL, MOTI; see GALLUS, WILLIAM A., JR.: 1518–1537
SEIMAN, CHARLES J.; see MATHUR, MUKUT B.: 5–25
SHAPIRO, ALAN; see GAO, JIDONG; 2128–2142
SHAPIRO, LLOYD J.; FRANKLIN, JAMES L.; Potential Vorticity Asymmetries and Tropical Cyclone Motion, 124–131
SHERWOOD, STEVEN C.; WAHRLICH, RALPH; Observed Evolution of Tropical Deep Convective Events and Their Environment, 1777–1795
SHERWOOD, STEVEN C.; Convective Precursors and Predictability in the Tropical Western Pacific, 2977–2991
SHINODA, TOSHIAKI; HENDON, HARRY H.; GLICK, JOHN; Intraseasonal Surface Fluxes in the Tropical Western Pacific and Indian Oceans from NCEP Reanalyses, 678–693
SHUKLA, J.; see SCHNEIDER, EDWIN K.; 1187–1207
SIEDLARZ, LEANNE M.; see KOCH, STEVEN E.; 2854–2879
SIMPSON, JOANNE; see HALVERSON, JEFFREY B.; 1208–1228
SLINGO, J. M.; see ANNAMALAI, H.; 1157–1186
SMULL, BRADLEY F.; see YU, CHENG-KU; 838–857
SMULL, BRADLEY F.; see COLLE, BRIAN A.; 1310–1334
SOUSOUNIS, PETER J.; see WEISS, CHRISTOPHER C.; 565–574
SPENCER, PHILLIP L.; JANISH, PAUL R.; DOSWELL, CHARLES A., III; A Four-Dimensional Objective Analysis Scheme and Multitriangle Technique for Wind Profiler Data, 279–291
SPERBER, K. R.; see ANNAMALAI, H.; 1157–1186
STEENBURGH, W. JAMES; see SCHULTZ, DAVID M.; 1108–1124
STENSRUD, DAVID J.; BROOKS, HAROLD E.; DU, JUN; TRACTON, M. STEVEN; ROGERS, ERIC; Using Ensembles for Short-Range Forecasting, 433–446
STEPHENSON, D. B.; KUMAR, K. RUPA; DOBLAS-REYES, F. J.; ROYER, J.-F.; CHAUVIN, F.; PEZZULLI, S.; Extreme Daily Rainfall Events and Their Impact on Ensemble Forecasts of the Indian Monsoon, 1954–1966
STEYAERT, L. T.; see PIELKE, R. A., SR.; 1663–1673
SWARZTRAUBER, PAUL N.; see ADAMS, JOHN C.; 1872–1878
TAKEMI, TETSUYA; Structure and Evolution of a Severe Squall Line over the Arid Region in Northwest China, 1301–1309
TAKLE, EUGENE; see PAN, ZAITAO; 308–321
TALKNER, PETER; see WEBER, RUDOLF O.; 576–576
TANGUAY, M.; POLAVARAPU, S.; The Adjoint of the Semi-Lagrangian Treatment of the Passive Tracer Equation, 551–564
TAO, WEI-KUO; see HALVERSON, JEFFREY B.; 1208–1228
THELIN, E.; see MEYERS, S. D.; 1599–1612
THEPAUT, JEAN-NOËL; see JANISKOVA, MARTA; 26–45
THOMPSON, W. T.; see DORMAN, C. E.; 2143–2159
THORNCROFT, CHRIS; see PYTHAROULIS, IOANNIS; 2266–2280
THORPE, ALAN J.; see DEMIRTAS, MERAL; 922–939
THORSTEINSSON, SIGURDUR; KRISTJANSSON, JON EGILL; ROSTING, BJORN; ERLINGSSON, VIDAR; ULFARSSON, GUDMUNDUR FREYR; A Diagnostic Study of the Flateyri Avalanche Cyclone, 24–26October 1995, Using Potential Vorticity Inversion, 1072–1088
TIJM, A. B. C.; HOLTSLAG, A. A. M.; VAN DELDEN, A. J.; Observations and Modeling of the Sea Breeze with the Return Current, 625–640
TODLING, RICARDO; see YANG, YAN; 2359–2378
TOMASSINI, M.; KELLY, G.; SAUNDERS, R.; Use and Impact of Satellite Atmospheric Motion Winds on ECMWF Analyses and Forecasts, 971–986
TOVI, IVANA A.; see GAVRILOV, MILIVOJ B.; 2197–2203
TRACTON, M. STEVEN; see STENSRUD, DAVID J.; 433–446
TRAPP, R. J.; *Observations of Nontornadic Low-Level Mesocyclones and Attendant Tornadogenesis Failure during VORTEX, 1693–1705
TREHUBENKO, ERIC J.; see LANDER, MARK A.; 1274–1300
TROUILLET, VINCENT; see SAUVAGE, LAURENT; 486–503
TROUILLET, VINCENT; see CHEPFER, HÉLÈNE; 504–519
TUCKER, DONNA F.; CROOK, N. ANDREW; The Generation of a Mesoscale Convective System from Mountain Convection, 1259–1273
TURNER, RICHARD; see PAN, ZAITAO; 308–321
ULFARSSON, GUDMUNDUR FREYR; see THORSTEINSSON, SIGURDUR; 1072–1088
ULSES, GREG A.; see ELSBERRY, RUSSELL L.; 1912–1919
UTTAL, TANEIL; see WANG, JUNHONG; 2484–2502
VAN DELDEN, A. J.; see TIJM, A. B. C.; 625–640
VAN LEEUWEN, PETER JAN; *Comment on "Data Assimilation Using an Ensemble Kalman Filter Technique," 1374–1377
VAN LIPZIG, NICOLE P. M.; VAN MEIJGAARD, ERIK; ORLEMANS, JOHANNES; Evaluation of a Regional Atmospheric Model Using Measurements of Surface Heat Exchange Processes from a Site in Antarctica, 1994–2011
VAN MEIJGAARD, ERIK; see VAN LIPZIG, NICOLE P. M.; 1994–2011
VAN OLDENBORGH, GEERT JAN; BURGERS, GERRIT; VENZKE, STEPHAN; ECKERT, CHRISTIAN; GIERING, RALF; Tracking Down the ENSO Delayed Oscillator with an Adjoint OGCM, 1477–1495
VANZANDT, T. E.; see GRIVET-TALOCIA, S.; 1613–1629
VENZKE, STEPHAN; see VAN OLDENBORGH, GEERT JAN; 1477–1495
VIDALE, P. L.; see PIELKE, R. A., SR.; 1663–1673
WAHRLICH, RALPH; see SHERWOOD, STEVEN C.; 1777–1795
WAKIMOTO, ROGER M.; see NEIMAN, PAUL J.; 2102–2127
WALKO, R. L.; see PIELKE, R. A., SR.; 1663–1673
WANG, JUNHONG; ROSSOW, WILLIAM B.; UTTAL, TANEIL; ROZENDAAL, MARGARET; Variability of Cloud Vertical Structure during ASTEX Observed from a Combination of Rawinsonde, Radar, Ceilometer, and Satellite, 2484–2502
WECKWERTH, TAMMY M.; HORST, THOMAS W.; WILSON, JAMES W.; An Observational Study of the Evolution of Horizontal Convective Rolls, 2160–2179
WEINMAN, JAMES A.; see ALEXANDER, G. DAVID; 1433–1457
WEISMAN, MORRIS L.; see ATKINS, NOLAN T.; 2910–2927
WEISS, CHRISTOPHER C.; SOUSOUNIS, PETER J.; *A Climatology of Collective Lake Disturbances, 565–574
WENG, SHU-PING; see CHEN, TSING-CHANG; 1005–1020
WICKER, LOUIS J.; see ATKINS, NOLAN T.; 2910–2927
WILSON, JAMES W.; see WECKWERTH, TAMMY M.; 2160–2179
WILSON, LAURENCE J.; BURROWS, WILLIAM R.; LANZINGER, ANDREAS; A Strategy for Verification of Weather Element Forecasts from an Ensemble Prediction System, 956–970
WILSON, R.; see RAVETTA, F.; 2641–2653
WRIGHT, JON; see ROUHI, ALI; 1862–1871
WU, CHUN-CHIEH; CHENG, HSIU-JU; An Observational Study of Environmental Influences on the Intensity Changes of Typhoons Flo (1990) and Gene (1990), 3003–3031
WU, XIAOQING; LEMONE, MARGARET A.; Fine Structure of Cloud Patterns within the Intraseasonal Oscillation during TOGA COARE, 2503–2513
XUE, MING; see GAO, JIDONG; 2128–2142
YANG, WEIYU; see YANG, YAN; 2359–2378
YANG, YAN; NAVON, I. M.; TODLING, RICARDO; YANG, WEIYU; Sensitivity to Large-Scale Environmental Fields of the Relaxed Arakawa–Schubert Parameterization in the NASA GEOS-1 GCM, 2359–2378
YAU, M. K.; see ZHANG, DA-LIN; 1711–1721
YAU, M. K.; see LIU, YUBAO; 2597–2616
YOUNG, GEORGE S.; see ROZBICKI, JOHN J.; 1347–1361
YU, CHENG-KU; JOU, BEN JONG-DAO; SMULL, BRADLEY F.; Formative Stage of a Long-Lived Mesoscale Vortex Observed by Airborne Doppler Radar, 838–857
ZAPOTOCNY, TOM H.; see REAMES, FRED M.; 173–187
ZAPOTOCNY, TOM H.; see REAMES, FRED M.; 188–200
ZEHNDER, JOSEPH A.; POWELL, DONNA M.; ROPP, DAVID L.; The Interaction of Easterly Waves, Orography, and the Intertropical Convergence Zone in the Genesis of Eastern Pacific Tropical Cyclones, 1566–1585
ZHANG, DA-LIN; see CARRERA, MARCO L.; 641–660
ZHANG, DA-LIN; LIU, YUBAO; YAU, M. K.; *Surface Winds at Landfall of Hurricane Andrew (1992)—A Reply, 1711–1721

ZHANG, DA-LIN; RADEVA, EKATERINA; GYAKUM, JOHN; A Family of Frontal Cyclones over the Western Atlantic Ocean. Part I: A 60-h Simulation, 1725–1744
ZHANG, DA-LIN; RADEVA, EKATERINA; GYAKUM, JOHN; A Family of Frontal Cyclones over the Western Atlantic Ocean. Part II: Parameter Studies, 1745–1760
ZHANG., DA-LIN; see HUO, ZONGHUI; 2546–2561
ZHANG, DA-LIN; see HUO, ZONGHUI; 2563–2575
ZHANG, DA-LIN; see LIU, YUBAO; 2597–2616
ZHANG, DA-LIN; ALTSHULER, ERIC; The Effects of Dissipative Heating on Hurricane Intensity, 3032–3038
ZHANG, Y.; see HUNKE, E. C.; 396–408
ZHANG, Z.; KRISHNAMURTI, T. N.; A Perturbation Method for Hurricane Ensemble Predictions, 447–469
ZHU, YANQIU; NAVON, I. M.; Impact of Parameter Estimation on the Performance of the FSU Global Spectral Model Using Its Full-Physics Adjoint, 1497–1517
ZHU, ZHENGXIN; see SCHNEIDER, EDWIN K.; 1187–1207
ZIPSER, EDWARD J.; see CECIL, DANIEL J.; 103–123
ZUBOV, VLADIMIR A.; ROZANOV, EUGENE V.; SCHLESINGER, MICHAEL E.; Hybrid Scheme for Three-Dimensional Advective Transport, 1335–1346
ZUROVAC-JEVTIC, DANCE; Development of a Cirrus Parameterization Scheme: Performance Studies in HIRLAM, 470–485

Section B. Subject Index

Adaptive observations, tested on a typical misforecast case of North Atlantic cyclogenesis, 743
ADIFOR, sensitivity analysis of moist 1D Eulerian cloud model, 2180
Adjoint methods
  finding the ENSO-delayed oscillator with an adjoint ocean GCM, 1477
  generalization for intermittent data assimilation systems, 766
  impact of negative dissipation on analysis and forecast correction methods, 2576
  optimization of a hurricane track prediction model, 1586
  sensitivity of NASA GEOS-1 GCM to large-scale environmental fields, 2359
Advection
  conservative random choice method numerical solution of advection equation, 2281
  contour-advective semi-Lagrangian algorithm for the shallow-water equations, 1551
  hybrid scheme for three-dimensional approach, 1335
  numerical generation of entropies, 2211
  semi-Lagrangian treatment of the passive tracer equation, 551
  SPHEREPACK 3.0: a model-development facility, 1872
  used for inert trace constituent transport in numerical models, 173
  test of formulations in GCM, 822
Airborne Doppler radar
  kinematic structure of a hurricane with SLP less than 900 mb, 987
  observation of formative stage of long-lived mesoscale vortex, 838
Air–sea interaction
  cold air outbreak over Labrador Sea: roll vortices and air–sea interaction, 2379
  implementation of a mesh movement scheme in a nested ocean model, 1879
Altiplano, mechanisms responsible for rainy and dry periods over the Altiplano, 901
Anthropogenic effects, influence of landscape changes on weather in south Florida, 1663
Anvil clouds, interactions in TOGA COARE convective system, 1208
Arakawa C-grid, problem with grid-scale noise, 1928
Arctic front, interaction of Pacific cold front with shallow air mass east of the Rockies, 2102
Arctic sea ice, comparison of two high-resolution simulations, 396
ARPEGE applications, impact of extreme rainfall events on mean forecasts of the Indian monsoon, 1954
ARPS applications
  high-resolution modeling of the Cape Canaveral area sea and river breezes, 1808
  variational method of analysis of 3D wind fields from two Doppler radars, 2128
Asian summer monsoon, comparison of ECMWF and NCEP–NCAR reanalyses, 1157
Assimilation, generalization of using an adjoint model in intermittent assimilation, 766
ASTEX, variability of observedvertical cloud structure, 2484
Atlantic storms, Atlantic hurricane season of 1996, 581
Atmospheric data assimilation, application of maximum likelihood estimation of error covariance parameters, 1835
Australia, vertical velocity characteristics of deep convection over Darwin, Australia, 1056
Autocorrelation, space–time correlations of lightning distributions, 1850
Banded cloud systems, use and misuse of condidtional symmetric instability, 2709
Baroclinic waves, blocking over the South Pacific and Rossby wave propagation, 2233
Baroclinic zones, detection of non frontal baroclinic zones using potential temperature, 945
Barometer network, climatology of Midwestern pressure disturbances using wavelet analysis, 1613
Barotropic models
  ensemble forecasting of tropical cyclone motion, vortex pertubations, 2617
  ensemble forecasting of tropical cyclone motion using,1229
Basis functions, use in reconstructing monthly SST in the tropical Pacific Ocean (1868–1993), 1599
Beamsteering, application in a meteorological context to detect single waves, 57
Bight shelfbreak fronts, simulations and ESSE validation, 1408
Blocking, Rossby wave propagation and blocking over South Pacific, 2233
Blocking event, diagnosis of long-lasting event over southeast Pacific, 1761
Blocking indices, derived for Pacific and Atlantic ocean regions, 879
Block onset, using sensitivity perturbations in climatological flows, 879
Boundary layer
  adjustment of the marine boundary layer around Point Sur, California, 2143
  case-study observation sof transitions in boundary layer convective structures, 2895
  evaluation of a regional model with surface flux measurements in Antarctica, 1994
  observational study of the evolution of horizontal convective rolls, 2160
  structure in severe squall line development over arid regions, 1301
  variability of observed vertical cloud structure during ASTEX, 2484
Boundary layer model, problems with converting flight-level data to surface wind analysis, 1711
California, alternating wet and dry episodes over , 2759
Cascade interpolation, method of reducing computation time in semi-Lagrangian transport routines, 188

Case studies
cold air incursions over South America: a numerical case study, 2823
cold air outbreak over Labrador Sea: roll vortices and air–sea interaction, 2379
comparing ozone, temperature, and wind observations with model for a tropopause fold, 2641
family of frontal cyclones over the western Atlantic Ocean, 1725
interaction of PV anomalies in extratropical cyclogenesis, 2546, 2563
intraseasonal oscillation cloud-pattern structure during TOGA COARE, 2503
multiscale analysis of a mesobeta frontal passage in complex terrain, 2062
multiscale study of Hurricane Andrew: kinematics and inner-core structures, 2597
nocturnal rain showers over the windward coastal region of Hawaii, 2674
numerical prediction of a cold air outbreak using ensemble forecasts, 1538
observed influences on intensity changes in Typhoons Flo and Gene (1990), 3003
using piecewise PV inversion to diagnose frontogenesis, 2796
wintertime Gulf Coast squall line observed by EDOP airborne Doppler radar, 2928
Cell convection, observational study of the evolution ofhorizontal convective rolls, 2160
Central cold cover, associated with tropical cyclones, 132
Central dense overcast, associated with tropical cyclones, 132
C-grid models, new treatment of Coriolis terms at both high and low resolutions, 1928
Circulation, 2D model of the sea breeze with return current, 625
Circumpolar vortex, variability related to the quasi-biennial oscillation, 46
Cirrus clouds
analysis of radiative impact during EUCREX'94, 486
microphysics structure, 504
parameterization scheme and its performance in mesoscale model, 470
Climate model, test of a convective-wake parameterization in single-column version of CCM3, 1347
Climatology
accurate conservative remapping schemes for grids in spherical coordinates, 2204
alternating wet and dry episodes over California, 2759
climatology of Midwestern pressure disturbances using wavelet analysis, 1613
lightning ground flash measurements over the contiguous United States:1995–97, 2693
Mississippi moisture budget on regional scales, 2654
size of tropical cyclones as inferred from *ERS-1* and *ERS-2* data, 2992
space–time correlations of lightning distributions, 1850
used with persistence to forecast tropical cyclone track, 89
Clouds
prediction diagnosed from mesoscale weather model forecasts, 2465
validation and sensitivities of frontal clouds simulated by ECMWF model, 2514
variability of observed vertical structure during ASTEX, 2484
Clouds and radiation
alternating wet and dry episodes over California, 2759
modeling strategies for evaluating cloud and radiation parameterizations, 1967
Cloud bands, formation of forward-tilting cold front with multiple cloud bands, 1108
Cloud clearing, cumulus clearing downwind of snow cover, 1687
Cloud heating, radar-derived estimates of latent heating in the subtropics, 726
Cloud models, sensitivity analysis of moist 1D Eulerian model, 2180
Cloud parameterization, cirrus formation and maintenance scheme, 470
Cloud patterns, intraseasonal oscillation cloud-pattern structure during TOGA COARE, 2503
Cloud-resolving model, initialization with airborne Doppler radar of a tropical convective system, 1038
Cloud-top temperature, relationship to tropical cyclone intensity, 132
Coastal storms, numerical modeling of coastal trapped disturbance: structure and dynamics, 535
Coastal-trapped disturbances
numerical modeling of, structure and dynamics, 535
vertical structure in a stably stratified lower atmosphere, 201
Coastal winds, adjustment of the marine boundary layer around Point Sur, California, 2143
COAST IOP 5, observational/numerical study of cold front interacting with Olympic Range, 1310
Cold air outbreak
numerical prediction of a cold air outbreak using ensemble forecasts, 1538
over Labrador Sea: roll vortices and air–sea interaction, 2379
Cold air surges, cold air incursions over South America: a numerical case study, 2823
Cold fronts
diabatic effects on late-winter cold front evolution, 1518
discrete propagation in a nonconvective environment, 2083
formation of forward-tilting cold front with multiple cloud bands, 1108
interaction of Pacific front with shallow air masses east of the Rockies, 2102
observation and numerical study of interaction with Olympic Mountains, 1310
short-lived cold front in the southwestern United States, 2395
Convection
effects of environmental flow on tropical cyclone structure, 2044
generation of a mesoscale convective system from mountain convection, 1259
initiation by density currents: convergence, shear, and organization, 2455
interaction between wave activity and convection, and MJO in the ITCZ, 661
interaction of Pacific cold front with shallow air mass east of the Rockies, 2102
morphology, rainfall, and anvil interactions in TOGA COARE ensemble, 1208
spatial variability in sea-breeze fronts, 858
structure in hurricanes revealed by lightning locations, 520
suppression by entrainment and subsidence of mountain-wave circulation, 901
test of a convective-wake parameterization in single-column version of CCM3, 1347
vertical velocity characteristics of deep convection over Darwin, Australia, 1056
Convective adjustment, spurious interaction with isopycnal mixing and mixed layer ocean model, 1920
Convective boundary layer, w.r.t. rainy and dry episodes over the South American Altiplano, 901
Convective rolls, observational study of evolution, 2160
Coordinate systems
accurate conservative remapping schemes for grids in spherical coordinates, 2204
coordinate transformation on a sphere using conformal mapping, 2733
Coriolis force, contribution of zonal component to tropical cyclone recurvature, 1021
Coriolis terms, new treatment in C-grid models at both high and low resolutions, 1928
Correction methods, impact of negative dissipation on analysis and forecast correction methods, 2576
Covariance functions, three-dimensional, for NOGAPS data, 2293

Cross correlation, used to detect single waves at a given frequency, 57
Cumulus clouds, cumulus clearing downwind of snow cover, 1687
Cyclogenesis
attempt to improve forecasts using adaptive observations, 743
case study of lee cyclogenesis and associated low-level front, 1096
evolution of EKE/identification of factors leading to lower tropospheric cyclone, 2777
impact of dispersion of ensemble forecast on forecast accuracy, 1674
interaction of PV anomalies in extratropical cyclogenesis, 2546, 2563
large-scale patterns associated with tropical cyclogenesis in western Pacific, 2027
sensitivity to initial error and physical processes in numerical models, 641
Cyclogenesis/cyclolysis, the influence of preexisting boundaries on supercell evolution, 2910
Data assimilation
coupled procedure for assimilating geostationary satellite sounder data, 802
error subspace statistical estimation, 1385
generalization of using an adjoint model in intermittent assimilation, 766
modeling strategies for evaluating cloud and radiation parameterizations, 1967
Monte Carlo nonlinear filtering in ensemble assimilation and forecasting, 2741
semi-Lagrangian treatment of the passive tracer equation, 551
sensitivity of short-range forecasts to potential vorticity modifications, 922
three-dimensional covariance functions for NOGAPS data, 2293
use and impact of satellite-derived winds in model analyses and forecasts, 971
use of visible-band satellite data for mesoscale forecasting, 265
using error subspace statistical estimation, 1408
Deep convection
convective precursors and predictability in the tropical western Pacific, 2977
observed evolution of deep convection events and their environment, 1777
variational method of analysis of 3D wind fields from two Doppler radars, 2128
vertical velocity characteristics over Darwin, Australia,1056
Deformation, geostrophic vorticity in midlatitude occlusion process and, 2404
Density currents, convection initiation by density currents: convergence, shear, and organization, 2455
Depressions, interannual and intraseasonal variations in monsoon depressions, 1005
Diabatic heating, diabatic effects on late-winter cold front evolution, 1518
Diagnostics
characterization and sensitivity of mesoscale rainfall forecasts over New Zealand, 2880
observed influences on intensity changes in Typhoons Flo and Gene (1990), 3003
using piecewise PV inversion to diagnose frontogenesis, 2796
Diagnostic studies, of the Flateyri avalanche cyclone using potential vorticity inversion, 1072
Differentiation, sensitivity analysis of moist 1D Eulerian cloud model, 2180
Discrete frontal propagation, in nonconvective environments, 2083
Discrete quasigeostrophic mode, dispersion characteristics, 2197
Dispersion characteristics, discrete quasigeostrophic modes, 2197
DMSP, nonsystematic errors of monthly oceanic rainfall derived from SSM/I, 1630
Domain-averaged variables, sensitivity to model reinitialization as a function of boundary conditions, 308
Doppler radar
kinematic structure of a hurricane with SLP less than 900 mb, 987
observation of formative stage of long-lived mesoscale vortex, 838
tropical cyclone kinematic structure, 2419
Double ensemble Kalman filter, derivation of inbreeding and suboptimality terms, 1378
Downbursts
numerical study of traveling microbursts, 1244
squall line structure and evolution over arid regions, 1301
Dust storms, severe squall line development over arid regions, 1301
Dynamical model, empirical correction using Markov model, 2533
Easterly waves
interaction with orography and ITCZ in the genesis of tropical cyclones, 1566
large-scale patterns associated with tropical cyclogenesis in western Pacific, 2027
ECMWF
application of feature tracking algorithm to reanalysis data, 1362
comparison with ECMWF reanalyses of Asian summer monsoon, 1157
impact of negative dissipation on analysis and forecast correction methods, 2576
observed influences on intensity changes in Typhoons Flo and Gene (1990), 3003
validating ECMWF ensemble predictions using empirical orthogonal functions, 2346
Eddy kinetic energy, evolution of 3D EKE during cyclogenesis, 2777
El Niño–Southern Oscillation
finding the ENSO-delayed oscillator with an adjoint ocean GCM, 1477
reliability of dynamical predictions, 694
Empirical correction, applied to dynamical model, 2533
Empirical orthogonal functions
use in reconstructing monthly SST in the tropical Pacific Ocean (1868–1993), 1599
used to analyze summertime precipitation variability over South America, 409
used to describe the seasonal evolution of the Asian summer monsoon, 322
validating ECMWF ensemble predictions using empirical orthogonal functions, 2346
Energy diagnostic scheme, used in multilayer nonisopycnic, primitive equation ocean models, 1897
Ensembles
Kalman filter technique used for data assimilation, 1374
trade-offs between ensemble size and resolution, 1378
Ensemble dispersion, dependence on analysis and forecast systems, 1674
Ensemble forecasting
convergence of singular vectors toward Lyapunov vectors, 2309
ensemble forecasting of tropical cyclone motion, vortex pertubations, 2617
impact of extreme rainfall events on mean forecasts of the Indian monsoon, 1954
implications to short-range forecasting of precipitation, 1674
Monte Carlo nonlinear filtering in ensemble assimilation and forecasting, 2741
numerical prediction of a cold air outbreak using ensemble forecasts, 1538
short range, 433
tropical cyclone motion using a barotropic model, 1229
validating ECMWF ensemble predictions using empirical orthogonal functions, 2346
Ensemble Kalman filter, derivation of inbreeding and suboptimality terms, 1378
Ensemble predictions
pertubation method for hurricane ensemble predictions, 447
skill of, 1941

Ensemble prediction system, new verification method for deterministic weather element forecasts, 956
ENSO
prediction using coupled GCM, and ocean data assimilation and initialization, 1187
reliability of dynamical predictions, 694
ENSO cycle, blocking over the South Pacific and Rossby wave propagation, 2233
ENSO-delayed oscillator, finding with an adjoint ocean general circulation model, 1477
Entropy, numerical generation of entropies, 2211
Equitable performance, uniqueness of Gandin and Murphy's equitable performance measures, 1134
Error covariance parameters, for forecasts and observations using maximum-likelihood estimation, 1822
ESSE validation, used for mid-Atlantic bight shelfbreak front simulations, 1408
Eta Model
diabatic effects on late-winter cold front evolution, 1518
production of deep slantwise convection in model forecasts, 5
Eta Model applications, Mississippi moisture budget on regional scales, 2654
EUCREX'94, remote sensing of cirrus radiative parameters during experiment, 486
Euler equations, part of a numerical scheme in a regional climate model, 341
Evolution, observed evolution of deep convection events and their environment, 1777
Extratropical cyclones
cold air incursions over South America: a numerical case study, 2823
family of frontal cyclones over the western Atlantic Ocean, 1725, 1745
interaction of PV anomalies in extratropical cyclogenesis, 2546, 2563
observed width changes in North Pacific lows, 1089
quasi geostrophic forcing of ascent in occluded sector, 70
use and misuse of condidtional symmetric instability, 2709
using piecewise PV inversion to diagnose frontogenesis, 2796
Eyewall lightning, convective structure in hurricanes revealed by lightning locations, 520
Eyewall replacement, in tropical cyclones, 137
Eyewall structure, effects of environmental flow on tropical cyclone structure, 2044
Feature tracking, adaptive constraints, 1362
Finite element, trajectory calculations for spherical grids, 1651
Finite element methods, advection of trace species, test of formulations in GCM, 822
Finite volume methods, advection of trace species, test of formulations in GCM, 822
Flateyri avalanche cyclone, diagnostic study using potential vorticity inversion, 1072
Forecasting, probabilities for a period and its subperiods, 228
Forecast models, using ensembles for short-range forecasting, 433
Forecast skill
determining reliability of dynamical ENSO predictions, 694
ensemble prediction systems, 1941
score, developed for ensemble weather element forecasts, 956
Four-dimensional assimilation, generalization of using an adjoint model in intermittent assimilation, 766
Frontal analysis
diagnostic case study of event over southern China, 1096
given abrupt temperature changes in a shallow valley, 1125
Frontal clouds, validation and sensitivities of simulations by ECMWF model, 2514
Frontal cyclones
family of frontal cyclones over the western AtlanticOcean, 1725, 1745
observed width changes in north Pacific lows, 1089
Frontogenesis
primarily as the result of frictional processes, 258
role of conditional symmetric instability in copious precipitation events, 5
role of hydrostatic and nonhydrostatic dynamics, 252
short-lived cold front in the southwestern United States, 2395
Frontogenesis/frontolysis, using piecewise PV inversion to diagnose frontogenesis, 2796
Fronts
diabatic effects on late-winter cold front evolution, 1518
discrete propagation in a nonconvective environment, 2083
formation of forward-tilting cold front with multiple cloud bands, 1108
interaction of Pacific cold front with shallow air mass east of the Rockies, 2102
multiscale analysis of a mesobeta frontal passage in complex terrain, 2062
short-lived cold front in the southwestern United States, 2395
surface, the use and misuse of condidtional symmetric instability, 2709
upper-air, comparing ozone, temperature, and wind observations with model for a tropopause fold, 2641
Full physics adjoint, from FSU global spectral model applied to carry out parameter estimation, 1497
GCMs
atmosphere–ocean model used to predict ENSO, 1187
mountain drag and simple representation of mountain lift, 788
using a coupled model to determine the annual cycle of equatorial SST, 381
Generalized crossvalidation, relationship with maximum-likelihood method, 1822
Geodesic grid, trajectory calculations for a spherical grid in Cartesian space, 1651
Geopotential height
maximization of variation due to blocking event over southeast Pacific, 1761
pressure coordinates related to equivalent isobaric geopotential height, 145
GEOS-1 GCM applications, sensitivity of NASA GEOS-1 GCM to large-scale environmental fields, 2359
Geostropic vorticity, deformation in midlatitude occlusion process and, 2404
Global spectral model, impact on performance of FSU GSM of parameter estimation, 1497
Global transport, for simulating global transport of conservative and nonconservative species, 1335
Gravity current, sensitivity to frictionally driven PBL processes in simulated flow, 258
Gravity waves, mesoscale gravity waves and their environment in the central United States, 2854
Great Lakes
case-study observations of transitions in boundary layer convective structures, 2895
climatology of collective lake disturbances, 565
observations of coexisting lake-effect vortices, 1137
Grids, trajectory calculations for spherical grids in Cartesian space, 1651
Grid systems, coordinate transformation on a sphere using conformal mapping, 2733
Gust fronts, thermodynamics and velocity structure observed with wind profiler/RASS, 1796
Hawaii, nocturnal rain showers over the windward coastal region of Hawaii, 2674
Helmholtz equation, SPHEREPACK 3.0: a model-development facility, 1872
Horizontal convective rolls
high-resolution modeling of the Cape Canaveral area sea and river breezes, 1808
numerical simulation of interactions with sea-breeze fronts, 858

Humidity, w.r.t. low-level conditional instability over South American Altiplano, 901
Hurricanes
Atlantic hurricane season of 1996, 581
Atlantic hurricane season of 1997, 2012
convective structure revealed by lightning locations, 520
eastern North Pacific hurricane season of 1997, 2440
effects of dissipative heating on intensity, 3032
effects of environmental flow on tropical cyclone structure, 2044
intensity as a function of eye diameter, 137
kinematic structure of a hurricane with SLP less than 900 mb, 987
kinematic structure retrieved from single-Doppler radar observations, 2419
motion related to potential vorticity assymetries, 124
optimization of a hurricane track prediction model, 1586
pertubation method for hurricance ensemble predictions, 447
statistical postprocessing of NOGAPS tropical cyclone track forecasts, 1912
summary of 1996 activity in Eastern Hemisphere, 1274
Hurricane Andrew
a multiscale numerical simulation, 1706
surface winds at landfall, 1711
Hurricane Gilbert, kinematic structure revealed by Doppler radar, 987
Hurricane landfall, surface winds in Hurricane Andrew, 1711
Hurricane Opal, analysis of Eta Model landfall forecast errors, 292
Hybrid transport scheme, 3D, consisting of vertical and horizontal transport on spherical surfaces, 1335
Hydraulic jumps, adjustment of the marine boundary layer around Point Sur, California, 2143
Inbreeding, problem associated with using ensemble Kalman filter, 1374
Initial conditions
influence on forecast quality, 743
sensitivity of marine cyclogenesis in mesoscale models, 641
Initialization, sensitivity of short-range forecasts to potential vorticity modifications, 922
Instability, use and misuse of condidtional symmetric instability, 2709
Integration schemes, alternative extrapolations for departure point in semi-Lagrangian scheme, 1985
Interannual variations, monsoon depressions and their westward-propagating predecessors, 1005
Intraseasonal variations, monsoon depressions and their westward-propagating predecessors, 1005
Inversions, adjustment of the marine boundary layer around Point Sur, California, 2143
Isentropic-sigma models, simulation of inert trace constituent transport, 173
Isopycnal mixing, spurious interaction with convective adjustment and mixed layer ocean model, 1920
Isopycnal OGCMs, validations using observed upper-ocean variables during 1992–93, 706
ITCZ
interaction between wave activity and convection and MJO in the ITCZ, 661
interaction with orography and easterly waves in tropical cyclone genesis, 1566
Jets, intensification of low-level jet during development of MCSs, 2227
Jet streak, w.r.t. EKE growth and development prior to cyclogenesis, 2777
Jet streams, low-level structure of African easterly waves in 1995, 2266
Kalman filter, ensemble technique used for data assimilation, 1374
Kelvin–Helmholtz instability, high-resolution modeling of the Cape Canaveral area sea and river breezes,
Kinematics
multiscale study of Hurricane Andrew: inner-core structures and, 2597
role in sea-breeze fronts and horizontal convective rolls, 858
Kraus-Turner models, spurious interactions in ocean circulation models, 1920
Lagrangian integration schemes, alternative extrapolations for departure point position, 1985
Lake disturbances, climatology of collective, 565
Lake effects, case-study observations of transitions in boundary layer convective structures, 2895
Lake-effect vortices, observations of coexisting mesoscale vortices over the western Great Lakes, 1137
Large-scale circulation, role in summertime precipitation variability over South America, 409
Latent heating, radar-derived estimates in the subtropics, 726
Lee cyclogenesis, case study of associated lower-tropospheric front, 1096
Lightning
activity or inactivity correlated with future tropical cyclone intensity, 103
assimilation of lightning-derived rain rates in Superstorm 1993 forecast, 1433
convective structure in hurricanes revealed by lightning locations, 520
large peak cloud-to-ground lightning flashes in summer in United States, 1937
lightning ground flash measurements over the contiguous United States:1995–97, 2693
space–time correlations of lightning distributions, 1850
Low-level jets, intensification during development ofmesoscale convective systems, 2227
Lyapunov vectors, convergence of singular vectors toward Lyapunov vectors, 2309
Madden–Julian oscillation
interaction between wave activity and convection, and MJO in the ITCZ, 661
production of surface fluxes in warm ocean waters, 678
Marine boundary layer
adjustment around Point Sur, California, 2143
variability of observed vertical cloud structure during ASTEX, 2484
Marine cyclogenesis, sensitivity to initial error and physical processes in numerical models, 641
Markov model, used to construct empirical correction to nonlinear dynamical model, 2533
Maximum-likelihood estimation
applied to forecast and observation error covariance parameters, 1822
applied to error covariance parameters for atmospheric data assimilation, 1835
McGregor method, trajectory calculations extended to spherical grids, 1651
Mei-Yu front, intensification of low-level jet during development of MCSs, 2227
Mesocyclones, insufficiency of low-level mesocyclones for tornadogenesis, 1693
Mesoscale, cloud prediction diagnosed from mesoscale weather model forecasts, 2465
Mesoscale circulations, discrete frontal propagation in a nonconvective environment, 2083
Mesoscale convective systems
associated mesovortex during TOGA COARE, 1145
formative stage of a long-lived mesoscale vortex, 838
generation from mountain convection, 1259
intensification of the low-level jet on the Mei-Yu front, 2227
large-scale patterns associated with tropical cyclogenesis in western Pacific, 2027
observed evolution of deep convection events and their environment, 1777
squall line structure and evolution over arid regions, 1301
Mesoscale flow structures, associated with various instatbility processes in oceanic frontal regions, 1897
Mesoscale forecasting, assimilation of visible-band satellite data, 265

Mesoscale models
2D model of the sea breeze with return current, 625
cirrus parameterization scheme and its performance, 470
generation of a mesoscale convective system from mountain convection, 1259
simulations of an observed narrow cold-frontal rainband, 252
Mesoscale observations, three-dimensional applications of a successive corrections analysis scheme, 236
Mesoscale systems
characterization and sensitivity of mesoscale rainfall forecasts over New Zealand, 2880
evolution of oceanic squall lines in Tropics from radar and satellite data, 2951
influence of preexisting boundaries on supercell evolution, 2910
mesoscale gravity waves and their environment in the central United States, 2854
multiscale analysis of a mesobeta frontal passage in complex terrain, 2062
Mesoscale vortices
formative stage observed by airborne Doppler radar, 838
observations of coexisting lake-effect vortices over the Great Lakes, 1137
Mesovortex, within a near-equatorial MCS during TOGA COARE, 1145
Microbursts, numerical study of traveling microbursts, 1244
Microwave radiation, ice-scattering signatures correlated with future tropical cyclone intensity, 103
Microwave sounding unit, used to diagnose QBO influence on circumpolar vortex variability, 46
Mixed layer models, spurious interaction with convective adjustment and isopycnal mixing, 1920
MM5 applications
comparing ozone, temperature, and wind observations with model for a tropopause fold, 2641
multiscale study of Hurricane Andrew: kinematics and inner-core structures, 2597
Model biases
evaluation of a regional model with surface flux measurements in Antarctica, 1994
Mississippi moisture budget on regional scales, 2654
modeling strategies for evaluating cloud and radiation parameterizations, 1967
numerical prediction of a cold air outbreak using ensemble forecasts, 1538
sensitivity of NASA GEOS-1 GCM to large-scale environmental fields, 2359
Model diagnostics, interaction of PV anomalies in extratropical cyclogenesis, 2546, 2563
Model errors, three-dimensional covariance functions for NOGAPS data, 2293
Model evaluation
ensemble forecasting of tropical cyclone motion, vortex pertubations, 2617
evaluation of a regional model with surface flux measurements in Antarctica, 1994
modeling strategies for evaluating cloud and radiation parameterizations, 1967
numerical generation of entropies, 2211
validating ECMWF ensemble predictions using empirical orthogonal functions, 2346
Modeling
numerical modeling of coastal trapped disturbance: structure and dynamics, 535
sensitivity analysis of moist 1D Eulerian cloud model, 2180
Model fitting, optimization of a hurricane track prediction model, 1586
Model output fields, used in a coupled procedure as the first guess for thermodynamic retreivals, 802
Model ouput statistics, cloud prediction diagnosed from mesoscale weather model forecasts, 2465
Model reinitialization, used after long period of integration to minimize accumulated model errors, 308
Model validation, frontal clouds simulated by ECMWF model, 2514
Moisture, Mississippi moisture budget on regional scales, 2654
Momentum, transports associated with tropical cyclone recurvature, 1021
Monocrystalline particles, used to approximate the complex microphysical structure of cirrus cloud, 504
Monsoons
impact of extreme rainfall events on mean forecasts of the Indian monsoon, 1954
interannual and intraseasonal variations in monsoon depressions, 1005
large-scale patterns associated with tropical cyclogenesis in western Pacific, 2027
seasonal and intraseasonal variations during summer in Asia, 322
Monte Carlo techniques, Monte Carlo nonlinear filtering in ensemble assimilation and forecasting, 2741
Mountain convection, generation of mesoscale convective systems, 1259
Mountain drag, simple representation of mountain lift in a GCM, 788
Mountain meteorology, multiscale analysis of a mesobeta frontal passage in complex terrain, 2062
Moving-mesh models, implementation of a mesh movement scheme in a nested ocean model, 1879
Multitriangle technique, used with four-dimensional objective analysis for wind profiler data, 279
Multivariate data, used to estimate covariance parameters for atmospheric data assimilation, 1835
NCEP–NCAR reanalyses, comparison with ECMWF reanalyses of Asian summer monsoon, 1157
Nested models, implementation of a mesh movement scheme in a nested ocean model, 1879
NOGAPS model
statistical postprocessing of tropical cyclone track forecasts, 1912
three-dimensional covariance functions for pressure height data, 2293
Nonlinear filtering, Monte Carlo nonlinear filtering in ensemble assimilation and forecasting, 2741
Nonparametric estimators, an oceanographic application through extension to nonisotropic kernels, 214
Numerical methods
alternative extrapolations for departure point in semi-Lagrangian scheme, 1985
conservative random choice method numerical solution of advection equation, 2281
numerical generation of entropies, 2211
Numerical model, used to simulate roll convection within an arctic cold air outbreak, 363
Numerical modeling
advection schemes for trace species, tests in GCMs, 822
cirrus parameterization scheme and its performance, 470
contour-advective semi-Lagrangian algorithm for the shallow-water equations, 1551
global isopycnal OGCM validation using observed variables, 706
mountain drag and simple representation of mountain lift in a GCM, 788
reliability of ENSO predictions, 694
sensitivity of marine cyclogenesis to initial errors and physical processes, 641
sensitivity of short-range forecasts to potential vorticity modifications, 922
study of traveling microbursts, 1244

three-dimensional covariance functions for NOGAPS data, 2293
use and impact of satellite atmospheric motion winds, 971
validation and sensitivities of frontal clouds simulated by ECMWF model, 2514
Numerical model integration, using a very efficient semi-implicit semi-Lagrangian numerical scheme, 341
Numerical simulation, multiscale simulation of Hurricane Andrew, 1706
Numerical weather prediction
2D model of the sea breeze with return current, 625
interactions of sea-breeze fronts and horizontal convective rolls, 858
role of analyses in prediction of tropical cyclogenesis, 611
Objective analysis
four-dimensional scheme for wind profiler data, 279
mesoscale gravity waves and their environment in the central United States, 2854
value of subspace approach in error subspace statistical estimation, 1385
variational method of analysis of 3D wind fields from two Doppler radars, 2128
Observational studies
multiscale analysis of a mesobeta frontal passage in complex terrain, 2062
nocturnal rain showers over the windward coastal region of Hawaii, 2674
observed influences on intensity changes in Typhoons Flo and Gene (1990), 3003
size of tropical cyclones as inferred from *ERS-1* and *ERS-2* data, 2992
variational method of analysis of 3D wind fields from two Doppler radars, 2128
wintertime Gulf Coast squall line observed by EDOP airborne Doppler radar, 2928
Occlusions
geostrophic vorticity and deformation in midlatitude occlusion process, 2404
role of Q vector and trough of warm air aloft in extratropical cyclones, 70
Ocean–atmosphere data, constraints and issues pertaining to data assimilation, 1385
Ocean circulation models, spurious interactions in vertical mixing parameterizations, 1920
Ocean data, assimilation, initialization, and predictions of ENSO with coupled GCM, 1187
Ocean global circulation model, validations using observed upper-ocean variables during 1992–93, 706
Ocean models
coordinate transformation on a sphere using conformal mapping, 2733
implementation of a mesh movement scheme in a nested ocean model, 1879
pointwise energy diagnostic scheme for primitive equation ocean models, 1897
Ocean modeling, global isopycnal OGCM validation using observed variables, 706
Oceanic rainfall, nonsystematic errors derived from SSM/I, 1630
Oceanography, extension of spherical nonparametric estimators to nonisotropic kernels, 214
Olympic Mountains, observational and numerical study of interaction with a cold front, 1310
Omega equation, velocity potential form in sigma coordinates, 145
Optimal interpolation, generalization of using an adjoint model in intermittent assimilation, 766
Outgoing longwave radiation, blocking over the South Pacific and Rossby wave propagation, 2233
Ozone, comparing ozone, temperature, and wind observations with model for a tropopause fold, 2641
Pacific hurricanes, eastern North Pacific hurricane season of 1997, 2440
Parameter estimation, impact on performance of FSU global spectral model, 1497
Parameterizations
mountain drag and simple representation of mountain lift in a GCM, 788
validation and sensitivities of frontal clouds simulated by ECMWF model, 2514
Parameter studies
convergence of singular vectors toward Lyapunov vectors, 2309
family of frontal cyclones over the western Atlantic Ocean, 1745
impact of negative dissipation on analysis and forecast correction methods, 2576
modeling strategies for evaluating cloud and radiation parameterizations, 1967
sensitivity of NASA GEOS-1 GCM to large-scale environmental fields, 2359
Parcel trajectories, determined by the timeintegration of velocity, 1639
Passive tracer equation, semi-Lagrangian treatment, 551
Persistence, used with climatology to forecast tropical cyclone track, 89
Petterson scheme, computing trajectories, 1639
Physical parameterizations, developed for use with four-dimensional variational assimilation, 26
Planetary boundary layer, importance of correct representation in mesoscale models, 258
Polar regions
accurate conservative remapping schemes for grids in spherical coordinates, 2204
coordinate transformation on a sphere using conformal mapping, 2733
evaluation of a regional model with surface flux measurements in Antarctica, 1994
Polycrystalline particles, used to approximate the complex microphysical structure of cirrus cloud, 504
Postanalysis filtering, used to complement spectral studies of mesoscale data, 236
Potential temperature
use in frontal analysis, 1125
use in surface frontal analysis, 945
Potential vorticity
asymmetries related to tropical storm and hurricane motion, 124
interaction of PV anomalies in extratropical cyclogenesis, 2546, 2563
sensitivity of short-range forecasts to local modifications, 922
using piecewise PV inversion to diagnose frontogenesis, 2796
Potential vorticity inversion, diagnostic study of the Flateyri avalanche cyclone using, 1072
Precipitable water, variational assimilation of SSMI retrievals, 1458
Precipitation
alternating wet and dry episodes over California, 2759
characterization and sensitivity of mesoscale rainfall forecasts over New Zealand, 2880
effect of blocking event in South America, 1761
impact of extreme rainfall events on mean forecasts of the Indian monsoon, 1954
influence of anthropogenic landscape changes on south Florida, 1965
Mississippi moisture budget on regional scales, 2654
nocturnal rain showers over the windward coastal region of Hawaii, 2674
probabilistic forecasts for a period and its subperiods, 228
trade wind rainfall atop Mount Waialeale, Kauai, 2217
Prediction skill, ensemble prediction systems, 1941
Pressure, climatology of Midwestern pressure disturbances using wavelet analysis, 1613
Pressure systems, observed width changes in north Pacific lows, 1089
Principal modes, underlying climatological variations of the Asian summer monsoon, 322

Probabilistic forecast, skill of ensemble prediction systems, 1941
Probabilities, theoretical relations for forecasting, 228
Probability distributions, used in ensemble weather element forecast verification, 956
Q vector, role in frontogenesis via generation of isobaric thermal ridge in occlusion, 70
Quasi-biennial oscillation, influence on circumpolar vortex, 46
Quasigeostrophic models
  convergence of singular vectors toward Lyapunov vectors, 2309
  impact of negative dissipation on analysis and forecast correction methods, 2576
Quasigeostrophic PV inversion, used to improve hurricane track forecasts, 292
Radar
  case-study observations of transitions in boundary layer convective structures, 2895
  climatology of Midwestern pressure disturbances using wavelet analysis, 1613
  estimates of latent heating in the subtropics, 726
  evolution of oceanic squall lines in Tropics from radar and satellite data, 2951
  initialization with airborne Doppler radar of a tropical convective system, 1038
  kinematic structure of a hurricane with SLP less than 900 mb, 987
  observation of formative stage of long-lived mesoscale vortex, 838
  reflectivity fields observed for two gust fronts during MCTEX, 1796
  tropical cyclone kinematic structure from single-Doppler observations, 2419
  wintertime Gulf Coast squall line observed by EDOP airborne Doppler radar, 2928
Rainfall
  charactisteristics in TOGA COARE convective system, 1208
  trade wind rainfall atop Mount Waialeale, Kauai, 2217
RAMs, characterization and sensitivity of mesoscale rainfall forecasts over New Zealand, 2880
Reanalyses, of ocean surface fluxes from NCEP compared to COARE, 678
Regional climate, long-term simulations as a sequence of short segments, 308
Regional climate model, performance of a semi-implicit semi-Lagrangian version, 341
Remote sensing, cirrus radiative parameters during EUCREX'94, 486
Reynolds stress, w.r.t. to role in jet streak intensification in lower-tropospheric cyclones, 2777
Roll convection
  observational study of evolution, 2160
  within an arctic cold air outbreak, 363
Roll vortices
  case-study observations of transitions in boundary layer convective structures, 2895
  cold air outbreak over Labrador Sea: roll vortices and air–sea interaction, 2379
Rossby waves
  observed and GCM-simulated planetary-scale westward-propagating patterns, 2324
  propagation and blocking over the South Pacific, 2233
Rotating sphere, new time stepping method for solution of shallow-water equations, 1862
Satellite data
  assimilation of satellite-derived rain rates in Superstorm 1993 forecast, 1433
  assimilation of visible-band data for mesoscale forecasting, 265
  temperature, humidity, and wind at the global tropopause, 2248
Satellite-derived winds, impact on ECMWF anayses and forecasts, 971
Satellite sensors
  convective precursors and predictability in the tropical western Pacific, 2977
  evolution of oceanic squall lines in Tropics from radar and satellite data, 2951
  size of tropical cyclones as inferred from *ERS-1* and *ERS-2* data, 2992
Sea breeze
  comparison to snow breeze, 1687
  observations and modeling with return current, 625
Sea-breeze front, numerical simulation of interactions with horizontal convective rolls, 858
Sea ice dynamics, comparison of high-resolution models, 396
Sea surface temperatures,
  coupled GCM perspective on annual cycle in equatorial oceans, 381
  reconstruction using adaptive climate basis functions, 1599
Sea–land breezes, high-resolution modeling of the Cape Canaveral area sea and river breezes, 1808
Semi-Lagrangian adjoints, treatment of the passive tracer equation, 551
Semi-Lagrangian advection, contour-advective semi-Lagrangian algorithm for the shallow-water equations, 1551
Semi-Lagrangian algorithms, used for inert trace constituent transport in numerical models, 188
Semi-Lagrangian integration, alternative extrapolations for departure point position, 1985
Semi-staggered grids, effect of orientation on propogation of quasigeostrophic modes, 2197
Sensitivity analysis, automatic differentiation used with moist 1D Eulerian cloud model, 2180
Sensitivity perturbations, used to study block onset in climatological flows, 879
Sensitivity studies
  characterization and sensitivity of mesoscale rainfall forecasts over New Zealand, 2880
  effects of dissipative heating on hurricane intensity, 3032
  influence of preexisting boundaries on supercell evolution, 2910
  sensitivity of NASA GEOS-1 GCM to large-scale environmental fields, 2359
Severe storms, numerical study of traveling microbursts, 1244
Severe weather
  Atlantic hurricane season of 1996, 581
  pertubation method for hurricance ensemble predictions, 447
Shallow-water equations
  contour-advective semi-Lagrangian algorithm, 1551
  new time stepping method for solution on a rotating sphere, 1862
  SPHEREPACK 3.0: a model-development facility, 1872
Short-range forecasting, using ensembles, 433
SIGMA coordinates, used in velocity potential form of generalized omega equation, 145
SIGMA models, simulation of inert trace constituent transport, 173
Simulation
  conservative random choice method numerical solution of advection equation, 2281
  diabatic effects on late-winter cold front evolution, 1518
  family of frontal cyclones over the western Atlantic Ocean, 1725, 1745
  high-resolution modeling of the Cape Canaveral area sea and river breezes, 1808
  multiscale study of Hurricane Andrew: kinematics and inner-core structures, 2597
  numerical generation of entropies, 2211
  numerical prediction of a cold air outbreak using ensemble forecasts, 1538
Skill scores
  developed for ensemble weather element forecasts, 956
  uniqueness of Gandin and Murphy's equitable performance measures, 1134

Slantwise convection, role in vertical motions associated with frontogenesis, 5
Snow breeze, comparison to sea breeze, 1687
Snow cover, effect on clearing of cumulus clouds downwind, 1687
Software, SPHEREPACK 3.0: a model-development facility, 1872
South America
  cold air incursions over South America: a numerical case study, 2823
  role of large-scale circulation in summertime precipitation variability, 409
South Atlantic convergence zone, role in summertime precipitation variability over South America, 409
Spectral analysis, low-level structure of African easterly waves in 1995, 2266
Spherical nonisotropic kernels, an oceanographic application, 214
Squall lines
  evolution of oceanic squall lines in Tropics from radar and satellite data, 2951
  simulations using NCAR's CCM3 climate model, 1347
  structure and evolution over arid regions, 1301
  wintertime Gulf Coast squall line observed by EDOP airborne Doppler radar, 2928
SSM/I
  impact of assimilating SSM/I precipitable water on CMC analyses/forecasts, 1458
  nonsystematic errors related to derivation of monthly oceanic rainfall, 1630
Statistics
  impact of extreme rainfall events on mean forecasts of the Indian monsoon, 1954
  space–time correlations of lightning distributions, 1850
  validating ECMWF ensemble predictions using empirical orthogonal functions, 2346
Statistical analysis, applied to storm-track ensembles, 1362
Steady-state models, convection initiation by density currents: convergence, shear, and organization, 2455
Steering flow, importance of accurate representation in hurricane track forecasts, 292
Step orography, trapped wave solution for lower atmosphere with constant buoyancy frequency, 201
STORM-FEST, mesoscale gravity waves and their environment in the central United States, 2854
Stratocumulus, variability of observed vertical cloud structure during ASTEX, 2484
Subtropical storms, Atlantic hurricane season of 1997, 2012
Subtropics, radar-derived estimates of latent heating, 726
Successive corrections, three-dimensional applications to mesoscale observations, 236
Successive substitution, Picard scheme for computing trajectories, 1639
Summaries, lightning ground flash measurements over the contiguous United States: 1995–97, 2693
Superstorm 1993
  effect of assimilating satellite-derived rain rates on forecast, 1433
  formation of forward-tilting cold front with multiple cloud bands, 1108
Surface fluxes
  accurate conservative remapping schemes for grids in spherical coordinates, 2204
  evaluation of a regional model with surface flux measurements in Antarctica, 1994
  intraseasonal variability in warm oceans using NCEP reanalyses, 678
Surface map analysis, proposal for a new method, 945
Synthetic aperture radar, used to observe atmospheric roll convection, 363
Tangent linear model, use in incremental four-dimensional variational assimilation, 26
Temperature, influence of anthropogenic landscape changes in south Florida, 1663
Temperature gradients, application to frontal analysis, 1125
Thermodynamic retrievals, use of model output fields as first guess, 802
Thunderstorms
  influence of preexisting boundaries on supercell evolution, 2910
  space–time correlations of lightning distributions, 1850
Time integration schemes, alternative extrapolations for departure point in semi-Lagrangian scheme, 1985
Time stepping method, for solution of shallow water equations on a rotating sphere, 1862
TOGA COARE
  intraseasonal oscillation cloud-pattern structure during TOGA COARE, 2503
  mesovortex observed within a near-equatorial MCS, 1145
  morphology, rainfall characteristics, and anvil interactions in convection, 1208
Tornadogenesis, observations of nontornadic mesocyclones and tornadogenesis failure, 1693
Tracer equation, semi-Lagrangian treatment, 551
Track forecasts, statistical postprocessing of NOGAPS tropical cyclone track forecasts, 1912
Track prediction, optimization of a hurricane track prediction model, 1586
Trade wind rainfall, atop Mount Waialeale, Kauai, 2217
Trajectory, calculations for spherical geodesic grids in Cartesian space, 1651
Trapped wave solutions, for step orography in a lower atmosphere with constant buoyancy frequency, 201
Tropical convection, initialization with airborne Doppler radar of a tropical convective system, 1038
Tropical cyclogenesis, prediction using numerical weather prediction models, 611
Tropical cyclones
  association with central cold cover signature, 132
  eastern North Pacific hurricane season of 1997, 2440
  effects of dissipative heating on hurricane intensity, 3032
  effects of environmental flow on structure, 2044
  ensemble forecasting of motion using a barotropic model, 1229
  ensemble forecasting of tropical cyclone motion, vortex perturbations, 2617
  genesis as function of interaction with orography, easterly waves, and ITCZ, 1566
  implementation of a mesh movement scheme in a nested ocean model, 1879
  intensity versus satellite-based indicators of inner-core convection, 103
  kinematic structure retrieved from single-Doppler radar observations, 2419
  large-scale patterns associated with tropical cyclogenesis in western Pacific, 2027
  momentum transports associated with recurvature, 1021
  multiscale study of Hurricane Andrew: kinematics and inner-core structures, 2597
  observed influences on intensity changes in Typhoons Flo and Gene (1990), 3003
  optimization of a hurricane track prediction model, 1586
  simple statistical-synoptic track prediction technique, 89
  size of tropical cyclones as inferred from *ERS-1* and *ERS-2* data, 2992
  statistical postprocessing of NOGAPS tropical cyclone track forecasts, 1912
  summary of 1996 activity in Eastern Hemisphere, 1274
  very large eye, 137
Tropical events, observed evolution of deep convection events and their environment, 1777

Tropical meteorology
convective precursors and predictability in the tropical western Pacific, 2977
ensemble forecasting of tropical cyclone motion, vortex pertubations, 2617
evolution of oceanic squall lines in Tropics from radar and satellite data, 2951
intraseasonal oscillation cloud-pattern structure during TOGA COARE, 2503
low-level structure of African easterly waves in 1995, 2266
nocturnal rain showers over the windward coastal region of Hawaii, 2674
Tropical rainfall, tradewind rainfall atop Mount Waialeale, Kauai, 2217
Tropical storms
Atlantic hurricane season of 1997, 2012
motion related to potential vorticity assymetries, 124
Tropical tropospheric troughs, role in tropical cyclogenesis, 611
Tropics, Atlantic hurricane season of 1997, 2012
Tropopause
comparing ozone, temperature, and wind observations with model for a tropopause fold, 2641
temperature, humidity, and wind at the global tropopause, 2248
Tropopause fold, role in observed narrow cold-frontal rainband over lee of Appalachians, 252
Troposphere, cyclogenesis factors and evolution in lower troposphere, 2777
Trowal airstream, role in wraparound cloud and precipitation in occluded systems, 70
Typhoons, summary of 1996 activity in Eastern Hemisphere, 1274
Upper-air data, temperature, humidity, and wind at the global tropopause, 2248
Upwelling, influence on annual cycle of SST, 381
U.S. Gulf States, wintertime Gulf Coast squall line observed by EDOP airborne Doppler radar, 2928
U.S. Middle West, mesoscale gravity waves and their environment in the central U.S., 2854
Variational analysis, variational method of analysis of 3D wind fields from two Doppler radars, 2128
Variational assimilation
applied to SSM/I total precipitable water retrievals on CMC analysis system, 1458
Verification, applied to explicit simulation of Hurricane Andrew, 1706
Viscous plastic model, comparison with alternative elastic–viscous plastic sea ice model, 396
Vortex
interaction of Pacific cold front with shallow air mass east of the Rockies, 2102
observations of tornadogenesis failure, 1693
Vortices, observations of coexisting lake-effect vortices over the Great Lakes, 1137
Vorticity, the influence of preexisting boundaries on supercell evolution, 2910
Vorticity dynamics, observed and GCM-simulated planetary-scale westward-propagating patterns, 2324
Water vapor imagery, use and impact of satellite-derived winds in model analyses and forecasts, 971
Wave detection, using an array of sensors, 57
Wavelet analysis, observed width changes in North Pacific lows, 1089
Wavelets, climatology of Midwestern pressure disturbances using wavelet analysis, 1613
Waves
atmospheric, low-level structure of African easterly waves in 1995, 2266
interaction between wave activity and convection, and MJO in the ITCZ, 661
Westward-propagating patterns, observed and GCM-simulated planetary-scale fluctuations, 2324
Wind observations, use and impact of satellite-derived winds in model analyses and forecasts, 971
Wind profiler, used to observe thermodynamics and vertical velocity of gust fronts, 1796
Wind profiler data, analyzed with 4D objective analysis and a multitriangle technique, 279
Wind retrieval, tropical cyclone kinematic structure from single Doppler radar, 2419
Wind shear, numerical study of traveling microbursts, 1244